Volume 4, Number 6 Pages 299 - 365 September 28, 1960

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New translations of Russian scientific and technical literature, recent additions to the Lending Library Unit loan collection of 15,000 individual translations and the translating activities of official and commercial organizations are regularly noted in the LLU TRANSLATIONS BULLETIN. In addition each issue includes several complete translations of Russian papers on such important topics as automation, education, machine translation, scientific research and new developments in China.

Library of Congress, Washington, D. C.
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This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946, with their tables of contents translated into English; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

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SOLAR ENERGY APPLICATIONS. July 60, 5p. 68 refs. OTS Selective Bibliography SB-418.
Order from OTS $0.10 OTS SB-418

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AGRICULTURE

SOVIET AGRICULTURE (INCLUDING CROPS, IMPLEMENTS, AND LIVESTOCK): SELECTED TRANSLATIONS NO. 9. 23 June 60, 98p. JPRS: 3425.
Order from OTS $2.25 60-31294

Trans. of Kommunist [Moscow] (USSR) 1959 [v. 36] no. 18, p. 10-19; Vestnik Sel'skokhozyaystvennoy Nauki (USSR) 1959 [v. 4] no. 11, p. 15-22, 50-57, and 133-136; Sel'skoye Khozyaystvo Kazakhstana (USSR) 1959, no. 12, p. 51-55 and 76-78; Kukuruza (USSR) 1959 [v. 4] no. 10, p. 24-30 and 1959, no. 11 p. 17-21 and 27-31; Ekonomika Sel'skogo Khozyaystva (USSR) 1959 [v. 30] no. 8, p. 12-18 and 64-67; Sel'skoye Khozyaystvo Severo-Zapadnoy Zony (USSR) 1959 [v. 2] no. 12, p. 52-54; and Sakharnaya Svekla (USSR) 1959, no. 10, p. 18-23 and 1959, no. 11, p. 39-44.

Consists of articles by N. P. Aleksandrov, N. Anisimov, P. I. Belkin, A. I. Buyanov, N. Dostanov, A. V. Gitalov, G. M. Kukta, S. Niyazbekov, S. A. Ostreyko, I. P. Pshenichnyy, N. F. Rostovtsev, V. D. Rudin, S. S. Samtsevich, G. Savinskiy, A. A. Vsailenko, and D. Yakovlev.

Litinskiy, S. A.
INVESTIGATION OF THE PROCESS OF AUTOMATIC DRIVING OF A TRACTOR. May 60 [15]p. 12 refs. RTS 1212.
Order from LC or SLA mi$2.40, ph$3.30 60-17910

Trans. of Mekhanizatsiya i Elektrifikatsiya Sotsialisticheskogo Sel'skogo Khozyaystva (USSR) 1958, no. 2, p. 25-31.

The theory and differential equations of the proposed system are discussed. A DT-54 caterpillar tractor and mold-board plow were tested by using a guide which rode in the previous furrow. Turning at the ends of the furrows was done manually. Results showed that automatic driving produces "better quality work" than manual driving for a single run, but errors compound rapidly in the case of multiple runs.

Yakushkin, D.
A MOST IMPORTANT STAGE IN THE DEVELOPMENT OF AGRICULTURE IN THE USSR. 20 July 60, 22p. 1 ref.
Order from OTS $0.75 60-31417

Trans. of Vestnik Statistiki (USSR) 1959, no. 12, p. 7-19.

Plant Cultivation

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1959, NO. 1 (Soviet Abstracts. Biology). 14 July 60, 44p. JPRS: 5020.
Order from OTS $1.00 60-11915

Contents:
Section K. Forestry. Abstracts 1433-1513.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1959, NO. 2 (Soviet Abstracts. Biology). 12 July 60, 175p. JPRS: 5017.
Order from OTS $1.00 60-11911

Contents:
Section M. Cultivated Plants. Abstracts 6199-6517.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Derebonko, V. V. and Florentsev, Ye. I.
FURTHER DEVELOPMENTS OF THE TOBACCO HARVESTING MACHINE. [1960] [6]p. (2 figs. omitted)
Order from SLA mi$1.80, ph$1.80 60-16667

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Dunin, M. S. and Churayev, I. A.
RECENT CONFERENCES ON PLANT DISEASES AND PROTECTION: THE PROBLEM OF IMMUNITY [AND] AFGHAN-SOVIET CONFERENCE (NO. 15). 20 July 60, 8p. JPRS: 5085.
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Ivanov, A. P.
IMPROVING THE WORK OF STATE VARIETY TESTING (Uluchit' Rabotu po Gosudarstvennomu Sortoispytaniyu). 14 July 60, 9p. Trans. A-1177.
Order from LC or SLA mi$1.80, ph$1.80 60-23153

Trans. of Selektsiya i Semenovodstvo (USSR) 1958, v. 23, no. 3, p. 43-46.

Mager, Ye. Ye.
IMPROVING SEED INSPECTION (Uluchshit' Semennoy Kontrol'). 13 July 60, 4p. 2 refs. Trans. A-1178.
Order from LC or SLA mi$1.80, ph$1.80 60-23154

Trans. of Selektsiya i Semenovodstvo (USSR) 1958, v. 23, no. 3, p. 59-60.

Petrova, Ye. I.
TO REORGANIZE THE WORK OF SEED-CONTROL LABORATORIES (Perestroit' Rabotu Kontrol'no-Semennykh Laboratorii). 12 July 60, 9p. Trans. A-1170.
Order from LC or SLA mi$1.80, ph$1.80 60-23148

Trans. of Selektsiya i Semenovodstvo (USSR) 1958, v. 23, no. 2, p. 66-69.

Rakitin, Yu. V. and Ovcharov, K. Ye.
THE EFFECT OF ADENINE AND NICOTINIC ACID ON THE GROWTH AND PRODUCTIVITY OF COTTON. Nov 59 [4]p. 3 refs. M 1297.
Order from LC or SLA mi$1.80, ph$1.80 60-15812

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1948, v. 61, p. 933-934.

Slobodyanik, N. I.
ABOUT MAKING THE METHODS OF EVALUATING THE SOWING QUALITY OF SEEDS MORE EXACT (Ob Utochenii Metodiki Otsenki Posevnykh Kachestv Semyan). [1960] 15p. (2 figs. omitted) 1 ref. Trans. A-1168.
Order from LC or SLA mi$2.40, ph$3.30 60-23146

Trans. of Selektsiya i Semenovodstvo (USSR) 1959, v. 24, no. 1, p. 60-65.

Smirnov, N. P.
TO MODERNIZE THE SEED GROWING SYSTEM (Usovershenstvovat' Sistemu Semenovodstva). 11 July 60, 16p. Trans. A-1169.
Order from LC or SLA mi$2.40, ph$3.30 60-23147

Trans. of Selektsiya i Semenovodstvo (USSR) 1958, v. 23, no. 2, p. 22-26.

ASTRONOMY

Astrophysics

SOVIET SPACE RESEARCH: SELECTED TRANSLATIONS. 26 Feb 60 [31]p. 22 refs. JPRS: 2308.
Order from OTS $0.75 60-11344

Trans. of *Astronomicheskiy Zhurnal (USSR) 1959, v. 36, no. 4, p. 564-572, p. 626-628, p. 734-740.

Contents:
On the Problem of Investigating Atmospheric Ozone by Photometry of Lunar Eclipses, by V. G. Fesenkov.
Mean Hourly Number of Meteors Recorded by a Radar Set. I. Streams, by Ye. I. Fialko.
A Molecular Time and Frequency Standard, by A. Ya. Leykin.
Observation of the Crab Nebula With the Large Radio Telescope of the Main Astronomical Observatory at Pulkovo, by G. P. Apushkinskiy and Yu. N. Pariyskiy.

Barashkova, Ye. P.
CERTAIN REGULARITIES IN THE REGIME OF TOTAL RADIATION (Nekotorye Zakonomernosti v Rezhime Summarnoy Radiatsii) tr. by Irene A. Donehoo. July 60 [22]p. 10 refs.
Order from LC or SLA mi$2.70, ph$4.80 60-19871

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1959, no. 80[142] p. 51-69.

Bugoslavskaya, N. Ya.
SOLAR ACTIVITY AND ITS EFFECT ON THE IONOSPHERE. 15 July 60 [52]p. JPRS: 5059.
Order from OTS $1.50 60-11955

Trans. of mono. Solnechnaya Aktivnosti i yeye Vlivaniye na Ionosfere, Moscow, 1959, p. 1-31.

The present lecture contains the basic data on the composition of solar radiation, and on the connection between the ionospheric and magnetic disturbances, which influence the degree of stability of operation of radio communication and the radiation from the active regions of the sun. To a great extent the material represents the experience of the Scientific Research Institute for Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves (NIZMIR) of the Ministry of Communications, USSR and many years of experience of the author of this paper in this field.

BEHAVIORAL SCIENCES

Psychology

Figlin, L. I.
THE EFFECT OF THE SCHOOL SCHEDULE UPON THE FATIGUE OF FIRST-GRADE PUPILS. 25 Apr 60 [29]p. (p. 29 omitted) 7 refs. JPRS: 2534.
Order from OTS $1.00 60-11523

Trans. of Sanitarno-Gigiyenicheskiy Meditsinskiy Institut. Trudy (USSR) 1956, v. 31, p. 41-60.

Selezneva, I. S.
SOME CHARACTERISTICS OF THE PERCEPTION OF ACCENT IN WORDS OF THE RUSSIAN LANGUAGE. [1960] 11p. 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-16610

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BIOLOGICAL SCIENCES

Kupriyanova, L. A.
POLLEN AND SPORES FROM WEST AFRICAN MANGROVES. [1960] 4p.
Order from ATS $5.60 ATS-02M42R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 129, no. 2, p. 428-430.

Anatomy and Physiology

PROBLEMS OF HEMATOLOGY AND BLOOD TRANSFUSION, 1960, VOL. 5, NO. 1. June 60, 76p.
Order from PP $40.00/year

Trans. of Problemy Gematologii i Perelivaniya Krovi (USSR) 1960, v. 5, no. 1, p. 3-60.

PROSPECTORS OF GREAT HEIGHTS (Razvedchiki Bol'shikh Vysot). Jan 60 [6]p. (1 illus. omitted). MCL-358/III.
Order from LC or SLA mi$1.80, ph$1.80 60-19078

Trans. of Pravda, Moscow (USSR) 1959, no. 189(14948) p. 6.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as part of 59-19716, AF-1 255 981, 3 Aug 59 [5]p.

The scouts are 2 dogs and a rabbit, test animals used in experiments on weightlessness. The ballistic rocket which served as a vehicle for the animals is not described. There is nothing specific on physiological findings.

RESOLUTIONS OF THE CONGRESS OF THE ALL-UNION PHYSIOLOGICAL SOCIETY (NO. 9). 20 July 60, 9p. JPRS: 5062.
Order from OTS $0.50 60-11963

Trans. of Fiziologicheskiy Zhurnal SSSR, 1960, v. 46, no. 2, p. 261-264.

These resolutions stress the fact that physiological experimentation in the USSR is hindered by the lack of mass-produced apparatus.

SECHENOV PHYSIOLOGICAL JOURNAL OF THE USSR, 1960, VOL. 46, NO. 1. June 1960, 166p.
Order from PP $60.00/year

Trans. of Fiziol[ogicheskiy] Zh[urnal] SSSR, 1960, v. 46, no. 1, p. 1-138 and index v. 45.

Knepper, Reinhold.
THE ENDONEURAL CEREBROSPINAL-FLUID PASSAGE (der Endoneurale Liquorweg) tr. by W. H. Everhardy. 21 Aug 59, 4p. (3 figs. omitted) 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-19053

Trans. of Z[entralblatt für] Allg[emeine] Path[ologie und Pathologische Anatomie] (East Germany) 1957, v. 97, p. 248-250.

Nikitin, V. N.
RUSSIAN STUDIES ON AGE-ASSOCIATED PHYSIOLOGY, BIOCHEMISTRY, AND MORPHOLOGY; HISTORICAL SKETCH AND BIBLIOGRAPHY, tr. by Paul DePorte. 7 June 60, 86p. No. 6-2-60.
Order from LC or SLA mi$4.80, ph$13.80 60-17762

Partial trans. (p. 1-41) of unidentified Russian mono. pub. by Kharkov Order of Labor of the Red Banner State Univ. im. A. M. Gorkiy Press, Kharkov, 1958, p. 1-200.

Biochemistry

Berezov, T. T.
CURRENT VIEWS ON THE PROCESS OF UREA FORMATION IN ANIMALS (Sovremennyye Uzglyady na Protsessy Obrazovaniya Mocheviny v Organizme Zhivotnykh). [1960] 35p. (footnotes omitted) 127 refs.
Order from LC or SLA mi$3.00, ph$6.30 60-23230

Trans. of Uspekhi Sovremennoy Biologii (USSR) 1955, v. 39, no. 3, p. 257-275.

Goldstein, M. and Abelin, I.
ON THE DETERMINATION OF THE CATECHOL AMINES AND THE PYROCATECHINS IN HUMAN URINE (Uber die Bestimmung der Catecholamine und der Brenzcatechine im Menschlichen Harn) tr. by William H. Everhardy. 19 Aug 59, 16p. 17 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18959

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1956, v. 39, p. 158-167.

Neher, R. and Wettstein, A.
BIOSYNTHESIS OF ALDOSTERONE: ISOLATION OF A C_{20}-STEROID LACTONE FROM HOG ADRENALS (Zur Biosynthese des Aldosteron: Isolierung Eines C_{20}-Steroid-Laktons aus Schweine-Nebennieren. Uber Steroide, 165). Rept. 165 on Steroids. [1960] 12p. 27 refs.
Order from SLA mi$2.40, ph$3.30 60-16640

Trans. of Helvet[ica] Chim[ica] Acta (Switzerland) 1960, v. 43, p. 623-628.

Orekhovich, V. N., Mardashev, S. R., and Dedov, S. S.
SOVIET BIOCHEMISTS VISITING THE USA. 24 Nov 59, 19p. JPRS: L-1090-N.
Order from OTS $0.50 60-11057

Trans. of Akademiya Meditsinskikh Nauk SSSR. V Vestnik [1959, v. 14] no. 7, p. 57-67.

The reported visit took place in November and December of 1953.

General Biology

BIOPHYSICS, 1960, VOL. 5, NO. 1. June 60, 143p.
Order from PP $30.00/year

Trans. of Biofizika (USSR) 1960, v. 5, no. 1, p. 3-119.

RUSSIAN-ENGLISH GLOSSARY OF HYDROBIOLOGY. [1960] 113p.
Pub. by Interlanguage Dictionaries Pub., Corp. 227 West 17th St., New York 11, N. Y. $7.50

Harms, Herbert.
A MODERN INTERPRETATION OF ELASTIC TISSUE STAINING (Eine Moderne Deutung der Elasticafärbung) tr. by P. Hajdu. 14 Jan 59, 19p. (Summary and bibliography omitted) 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-12693

Trans. of Acta Histochemica (East Germany) 1957, v. 4, p. 5-8 and 314-324.

Kursanov, G. A.
PHILOSOPHICAL SEMINAR OF BIOLOGISTS. 22 July 60, 2p. 1 ref. JPRS: 5011.
Order from OTS $0.50 60-11903

Trans. of Priroda (USSR) 1959 [v. 48] no. 10, p. 107-108.

Papers and discussions at sessions of a seminar called by the Ural affiliate of the USSR Academy of Sciences to discuss A. I. Oparin's book, The Origin of Life on Earth, and related topics are briefly noted.

Mayersbach, H.
IMMUNOHISTOLOGICAL METHODS. II. ANOTHER TAGGING STAIN: 1-DIMETHYLAMINONAPHTHALENE-5-SULFONIC ACID (Immunhistologische Methoden) tr. by William H. Everhardy. 18 Nov 58, 35p. (4 figs. and 2 illus. omitted) 21 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-12246

Trans. of Acta Histochem[ica] (East Germany) 1958, v. 5, p. 351-368.

Sánchez-Monge, E.
GLOSSARY OF GENETIC AND CTYOGENETIC TERMS. [1960] [18]p.
Order from SLA mi$2.40, ph$3.30 60-14268

Trans. of mono. Glosario de Terminos de Genetic y Citogenetica, 1950, p. 99-110.

Medical Specialties and Equipment

Nikovova, K. V.
HYGIENIC CHARACTERISTICS OF WORKING CONDITIONS INVOLVING HIGH-FREQUENCY HEATING IN THE ELECTROVACUUM INDUSTRY. 16 May 60, 6p. JPRS: 2653.
Order from OTS $0.50 60-11629

Trans. of Gigiyena Truda i Professional'nyye Zabolevaniya (USSR) 1959 [v. 3] no. 1, p. 9-12.

Zetek, Ya.
THE NEW CZECHOSLOVAK MEDICAL TECHNICAL EQUIPMENT AT THE INTERNATIONAL FAIR IN BRNO. 5 July 60, 7p. JPRS: 2961.
Order from OTS $0.50 60-11850

Trans. of Meditsinskaya Promyshlennost' SSSR, 1960 v. 14, no. 3, p. 56-60.

Microbiology

JOURNAL OF MICROBIOLOGY, EPIDEMIOLOGY AND IMMUNOBIOLOGY, 1959, VOL. 30, NO. 7. June 60, 196p.
Order from PP $60.00/year

Trans. of Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1959, v. 30, no. 7, p. 3-157.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1959, NO. 4 (Soviet Abstracts. Biology). 15 July 60, 79p. JPRS: 5019.
Order from OTS $1.00 60-11916

Contents:
Section F. Microbiology. Abstracts 14675-14946.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

*ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII (USSR) 1960 [VOL. 31] NO. 2, SELECTED ABSTRACTS [Journal of Microbiology, Epidemiology and Immunobiology]. [1960] [9]p. SOV/16-60-2-(2-5, 8, 10, 15-16)/35.
Order from LC or SLA mi$1.80, ph$1.80 60-17840-2

Dinsley, Alfred.
METHOD FOR THE PREPARATION OF IMPROVED CULTURE MEDIA. [1960] 1p.
Order from LC or SLA mi$1.80, ph$1.80 60-16619

Partial trans. (summary) of French patent 956,737, 1950.

Neurology and Psychiatry

Asratyan, Ye. A.
THE THEORY OF COMPENSATION FOR DISTURBED FUNCTIONS. 30 June 60, 23p. 29 refs. JPRS: 2817.
Order from OTS $0.75 60-11752

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya. 1960, v. 25, no. 1, p. 52-62.

In the highest adult animals the cerebral cortex, as a rule, plays a decisive part in the recovery of postural, support and locomotor functions disturbed as a result of severe organic injuries of the central and peripheral organs and nerves.

Morrell, Roger M., ed.
GERMAN-ENGLISH NEUROPHYSIOLOGY GLOSSARY [1960] 181p.
Order from CB $7.50

Stal'nenko, Ye. S., Luk'yanova, O. M., and Khvul', G. M.
ELECTROENCEPHALOGRAPHY OF HEALTHY AND SICK CHILDREN. 18 July 60, 9p. 8 refs. JPRS: 5039.
Order from OTS $0.50 60-11941

Trans. of Fiziologichnyy Zhurnal (USSR) 1960, v. 6, no. 1, p. 44-49.

Pathology

ABSTRACTS OF VARIOUS ISSUES OF THE RUSSIAN NEWSPAPER MEDITSINSKIY RABOTNIK. 21 June 60, 11p. JPRS: 3417.
Order from OTS $0.50 60-31289

Abstract Trans. of selected articles from Meditsinskiy Rabotnik (USSR) 1960 [v. 23] no. 16(1868)-20(1872).

AWARDS TO SOVIET WOMEN MEDICAL WORKERS. 18 July 60, 35p. JPRS: 3553.
Order from OTS $1.00 60-31404

Trans. of Meditsinskiy Rabotnik (USSR) 1960, v. 23, no. 21(1873) p. 1; no. 22(1874) p. 1-3; and no. 23(1875) p. 1-2.

The names and professional affiliations of women honored on the 50th anniversary of Internation Women's Day, 1960, are listed.

FOURTEENTH SESSION OF THE GENERAL MEETING OF THE ACADEMY OF MEDICAL SCIENCES USSR. 14 July 60, 8p. 1 ref. JPRS: 2997.
Order from OTS $0.50 60-11900

Trans. of Meditsinskiy Rabotnik (USSR) 1960 [v. 23] no. 8(1960) p. 3.

Speeches at the opening meeting of a five-day conference are briefly reviewed.

PROBLEMS OF ONCOLOGY, 1959, VOL. 5, NO. 7. May 60, 151p.
Order from PP $60.00/year

Trans. of Voprosy Onkologii (USSR) 1959, v. 5, no. 7, p. 3-126.

PROBLEMS OF ONCOLOGY, 1959 VOL. 5, NO. 8, June 60, 155p.
Order from PP $60.00/year

Trans. of Voprosy Onkologii (USSR) 1959, v. 5, no. 8, p. 131-255.

PROBLEMS OF ONCOLOGY, 1959, VOL. 5, NO. 9. June 60, 145p.
Order from PP $60.00/year

Trans. of Voprosy Onkologii (USSR) 1959, v. 5, no. 9, p. 259-382.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1959, NO. 5 (Soviet Abstracts. Biology). 15 July 60, 34p. JPRS: 5056.
Order from OTS $1.00 60-11953

Contents:
Section U. Problems of Pathology. Abstracts 22621-22963.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

WORKS OF THE INSTITUTE OF HIGHER NERVOUS ACTIVITY, PATHOPHYSIOLOGICAL SERIES, 1957, VOL. 3, EXPERIMENTAL INVESTIGATIONS INTO DISORDERS OF THE NERVOUS ACTIVITY OF ANIMALS UNDER INTOXICATIONS AND INFECTIONS, AND SEARCH FOR A PATHOGENETICALLY BASED THERAPY, tr. by Marc Paenson and others. 1960. [400]p. 245 refs. PL-480-PST Cat. no. 74.
Order from OTS $4.00 60-21086

Trans. of Akademiya Nauk SSSR. Institut Vysshey Nervnoy Deyatel'nosti. Trudy. Seriya Patofiziologicheskaya, 1957, v. 3, Experimental'nyye Issledovaniya Narushenii Vysshey Nervnoy Deyatel'nosti Zhivotnykh pri Nekotorykh Intoksikatsiyakh, Infektsiyakh i Poiski Patogenicheskiy Obosnovannoy Terapii.

The major portion of this collection of papers deals with experiments in sleep therapy which stemmed from hypotheses derived in the course of experimental work on staphylococcal, streptococcal or pneumoccocal infections in various laboratory animals.

Bassalyk, D. A.
ON THE DEFICIENCIES IN THE WORK OF THE SARATOV MEDICAL INSTITUTE. 11 July 60 [9]p. JPRS: 5014.
Order from OTS $0.50 60-11904

Trans. of Zdravookhraneniye Rossiyskoy Federatsii (USSR) 1960 [v. 4] no. 3, p. 40-41.

Bondarenko, P. P.
CERTAIN PHILOSOPHICAL PROBLEMS OF THEORETICAL MEDICINE. [1960] 7p. JPRS: 3516.
Order from OTS $0.50 60-31385

Trans. of Ak[ademiya] Med[itsinskikh] Nauk SSSR. Vestnik, 1959, v. 14, no. 7, p. 87-92.

Papers comprising a symposium sponsored and published by the Institute of Experimental Medicine of the USSR Academy of Medical Sciences are reviewed.

Fischer, Hans and Rossier, P. H.
SOME CASES OF HIGH VOLTAGE IRRADIATION AND SEVERE MUSCLE DAMAGE AND MYOGLOBINURIA; FINDINGS, PATHOLOGY, PROGNOSIS AND THERAPY (Starkstromunfälle und mit Schweren Muskelschädigungen und Myoglobinurie; Befunde, Pathologie, Prognoses und Therapie) tr. by Tatiana Boldyreff. 24 Mar 59, 39p. (10 figs. refs. omitted).
Order from LC or SLA mi$3.00, ph$6.30 59-14871

Trans. of Helv[etica] Med[ica] Acta (Switzerland) 1947, v. 14, p. 212-230.

Graffi, A.
THEORETICAL OBSERVATIONS CONCERNING THE MECHANISM OF MALIGNANT DEGENERATION WITH SPECIAL REFERENCE TO ONCOGENOUS VIRUSES (Theoretische Betrachtungen zum Mechanismus der Malignen Entartung unter Einbeziehung der Onkogenon Viren) tr. by P. Hajdu. 4 Dec 58, 12p. 32 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-12342

Trans. of Zeitschrift für Arztliche Fortbildung (East Germany) 1956 [v. 50] no. 12, p. 523-525.

Kurashov, S. V.
PUBLIC HEALTH IN 1960. 29 July 60, 7p. JPRS: 3636.
Order from OTS $0.50 60-31487

Trans. of Sovetskoye Zdravookhraneniye (USSR) 1960, v. 19, no. 1, p. 3-8.

Ludin, H. and Lauchenauer, Clara.
COMPARISON OF BILIGRAFIN AND ORALLY ACTIVE CHOLANGIOCHOLECYSTOGRAPHY CONTRAST MEDIA (BILOPTIN AND RELATED COMPOUNDS). [1960] 11p. [figs. omitted].
Order from SLA mi$2.40, ph$3.30 60-16688

Trans. of Schweiz[erische] Med[izinische] Wochenschr[ift] 1960, v. 90, no. 17, p. 471-[473].

The four tested contrast media were developed by Schering: all are salts of β-2, 4, 6-triiododimethylamino methylene-aminophenyl propionic acid. The intensity of bile duct filling is generally less with these preparations than with intravenously administered Biligrafin. The new preparations are however superior to earlier oral contrast media, and side effects are markedly fewer than with intravenous Biligrafin. (See also 60-16687)

Maystrakh, K. V.
THE ORGANIZATION OF PUBLIC HEALTH IN THE USSR, 4 ED. [1960] [235]p. 33 refs.
Order from LC or SLA mi$10.20, ph$36.30 60-13151

Trans. of mono. [Organizatsiya Zdravookhraneniya] 4 ed, Moscow, 1956.

Milliez, P., Hartmann, L., and Lagrue, G.
IMMUNE AND STARCH GEL ELECTROPHORESIS OF THE SERUM AND URINE OF SUBJECTS WITH NEPHROTIC SYNDROMES (Immuno-Électrophoreses et Électrophoreses à Travers Gel d'Amidon du Serum et des Urines de Sujets Atteints de Syndrome Néphrotique) tr. by Peggy Hajdu. 9 June 60, 14p. (4 figs. omitted) 12 refs. No. 6-5-60.
Order from LC or SLA mi$2.40, ph$3.30 60-17766

Trans. of Journal d'Urologie Médicale et Chirurgicale (France) 1959, v. 65, p. 248-257.

Moskovskaya, K. A.
INVESTIGATION OF THE EFFECT OF AIR POLLUTION ON THE HEALTH OF CHILDREN.
25 Apr 60, 6p. 9 refs. JPRS: 2533.
Order from OTS $0.50 60-11522

Trans. of Sanitarno-Gigiyenicheskiy Meditsinskiy Institut. Trudy (USSR) 1956, v. 31, p. 36-40.

Petrov, N. N., Krotkina, N. A. and others.
DYNAMICS OF THE ORIGIN AND DEVELOPMENT OF MALIGNANT GROWTHS IN EXPERIMENTS ON MONKEYS. [1960] 36p. (53 figs. omitted) 19 refs.
Order from LC or SLA mi$3.00, ph$6.30 60-23229

Trans. of unidentified Russian mono. Moscow, 1952.

The successful induction of malignant neoplasms by means of chemical carcinogenic substances and by short-wave radiation is described. The bone marrow of the long bones in monkeys appears to be the most favorable object for experimentation. The experimentally induced neoplasms in 2 monkeys were well amenable to auto-transplantation, but not to homo-transplantation: this is characteristic of spontaneous malignant tumors in man.

Pevsner, S. V.
THE SANITARY EPIDEMIOLOGICAL COUNCIL (NOVOSIBIRSK PROVINCE SANITARY-EPIDEMIOLOGICAL STATION). 13 July 60, 3p. JPRS: 3581.
Order from OTS $0.50 60-31422

Trans. of Gigiyena i Sanitariya (USSR) 1959, v. 24, no. 10, p. 71-72.

Rapoport, Ya. L.
MORPHOLOGIC BASES OF IMMUNOGENESIS (IMMUNOMORPHOLOGY) (Morfologicheskikh Osnovy Immunogeneza (Immunomorfologiya) tr. by R. Crawford. [1960] 47p. (14 figs. omitted) 89 refs.
Order from LC or SLA mi$3.30, ph$7.80 60-23232

Trans. of Arkhiv Patologii (USSR) 1957, v. 19, no. 2, p. 3-19.

Richter, K., Stecken, A., and Witte, H.
RAPID ORAL EXAMINATION OF GALLBLADDER AND BILE DUCTS. [1960] [6]p. (refs. omitted).
Order from SLA mi$1.80, ph$1.80 60-16687

Trans. of Deutsche Gesundheitswesen (East Germany) 1960, v. 15, no. 12, p. 630-631.

Oral administration of the contrast media known as Biloptin (di-iodoatophan) and SH 550 (a calcium salt of β-2, 4, 6-triiododimethylaminomethylene-aminophenyl propionic acid) has been successfully used for rapid differential diagnosis. In a large number of cases the bile ducts were clearly visualized in 30 min to 3 hr, while filling of the gallbladder followed soon thereafter. (See also 60-16688)

Sarkisov, D. S.
EXPERIMENTAL MODELS OF HUMAN DISEASES.
21 July 60, 6p. JPRS: 3586.
Order from OTS $0.50 60-31427

Trans. of Eksperimental'naya Khirurgiya (USSR) 1960, v. 5, no. 1, p. 3-7.

Segal', G. I. and Uzdin, Z. M.
TREATMENT OF BURNS WITH BLOOD AND SERUM FROM CONVALESCENT PATIENTS (Lecheniye Pzhogov Krov'yu i Syvorotki Rekonvalestsenta) tr. by T.W.B. 23 Apr 59, 4p.
Order from LC or SLA mi$1.80, ph$1.80 60-17653

Trans. of Sovet[skiy] Vrach[ebnyy Zhurnal] (USSR) 1940, v. 44, p. 835-840.

Experiments with dogs indicate that the blood of the burned organism is toxic, and that blood or serum of convalescents produces healing effects. It is assumed that the effect stems from a neutralization of decomposition products of albumins. Clinical use of convalescent serum is reported to have been effective.

Sherstnev, K. M.
THE PROBLEM OF THE CONTROL OF RHEUMATISM AND CARDIOVASCULAR DISEASES IN THE UKRAINIAN SSR. 29 July 60, 5p. JPRS: 3635.
Order from OTS $0.50 60-31486

Trans. of Sovetskoye Zdravookhraneniye (USSR) 1960, v. 19, no. 1, p. 36-40.

Vermel', Ye. M.
CLINICAL CHEMOTHERAPY OF MALIGNANT NEOPLASMS (Klinicheskaya Khimioterapiya Zlokachestvennykh Novoobrazovaniy) tr. by J. J. Oliver. [1960] 40p.
Order from LC or SLA mi$3.00, ph$6.30 60-23231

Trans. of Sovremennyye Probl[emy] Onkologii (USSR) 1956, v. 9, no. 4, p. 3-25.

This review is based primarily on non-Soviet sources. The substances under consideration are azo derivatives of mustard gas, antibiotic preparations, and hormone preparations.

Vortel, V. and Herout, V.
GENERALIZED INFECTION OF CHILDREN BY THE HERPES SIMPLEX VIRUS (Generalisierte Infektion mit dem Virus des Herpes Simplex bei Kindern) tr. by P. Hajdu. 27 Mar 59, 11p. (3 figs. omitted) 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-14585

Trans. of Zentralblatt für Allgemeine Pathologie und Pathologische Anatomie (East Germany) 1957, v. 96, p. 51-56.

Yeliseyev, V. G.
PLENARY SESSION OF THE SCIENTIFIC MEDICAL COUNCIL OF THE MINISTRY OF HEALTH RSFSR [AND] RESOLUTIONS OF THE PLENUM OF THE BOARD OF THE ALL-UNION SCIENTIFIC SOCIETY OF ANATOMISTS, HISTOLOGISTS, AND EMBRYOLOGISTS (MOSCOW, 20-22 JUNE 59). 22 July 60, 8p. JPRS: 3583.
Order from OTS $0.50 60-31425

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1960, v. 38, no. 1, p. 123-127.

Pharmacology and Toxicology

INSTRUCTIONS FOR THE PREPARATION AND CONTROL OF THE DRY BCG TUBERCULOSIS VACCINE, tr. by Paul DePorte. 17 June 60, 40p. No. 6-13-60.
Order from LC or SLA mi$3.30, ph$7.80 60-19487

Trans. of unidentified mono. (pamphlet) issued by Ministry of Health, USSR, State Control Institute of Sera and Vaccines im. Tarasevich, Moscow, 1954, 24p.

INSTRUCTIONS FOR THE PREPARATION, CONTROL, AND RELEASE OF ANTIMEASLES SERUM FROM VENOUS DONOR BLOOD, tr. by Paul DePorte. 24 June 60, 14p. No. 6-18-60.
Order from LC or SLA mi$2.40, ph$3.30 60-19484

Trans. of unidentified Russian mono. issued by Ministry of Health, USSR, State Serum and Vaccine Control Institute im. Tarasevich, 1954.

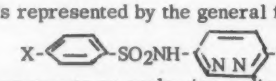
PROCEDURE FOR THE RECOVERY OF PANCREATIC PROTEOLYTIC ENZYMES FROM THE GLANDS OF MAMMALS. [1960] 5p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 60-16620

Trans. of French patent 945,164, gr. 14, cl. 1, requested 1946, issued 1948, pub. 1949, by Novo Therapeutisk Laboratorium A/S, Denmark.

PROCESS FOR THE PRODUCTION OF 6-SUBSTITUTED 3-SULFANILAMIDO-PYRIDAZINES AND THEIR SALTS. [1960] 12p.
Order from LC or SLA mi$2.40, ph$3.30 60-16675

Trans. of Argentine patent 154513, subject 112.538, for a period of 15 years, by Meito Sangyo Kabushiki Kaisha, Japan.

Compounds represented by the general formulas



where X represents an acylamine radical and Hal represents an atom of halogen, are reacted with metal alcoholates represented by ROMe, where R represents alkyl, aralkyl, or aryl radicals, and their salts and Me represents an atom of metal, in the absence of water, in order to convert -Hal into -OR and -X into $-NH_2$. The reaction is done at about 70° to 200° C for approximately 2 to 24 hours.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1959, NO. 4 (Soviet Abstracts. Biology). 14 July 60, 54p. JPRS: 5037.
Order from OTS $1.00 60-11945

Contents:
Section V. Pharmacology and Toxicology. Abstracts 18433-18799.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Duhm, Bernhard, Köster, Lothar and others.
METABOLISM AND ACCUMULATION OF VEROPHEN^R IN THE BODY OF THE RAT (Stoffwechsel und Verbleib von Verophen^R in Korper der Ratte) tr. by W. H. Everhardy. 20 Oct 59, 4p. (2 figs. omitted) 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-22100

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1958, v. 13b, p. 756-757.

Hareszty and Wolf.
PREPARATION OF DIGITALIS LANATA GLYCOSIDES. 22 Aug 51 [1]p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 60-14866

Trans. of Hungarian patent 130,209, Oct 42.

Kern, Walther, Salzmann, O., and Scholler, C.
THE TESTING OF SEVERAL OINTMENT BASES, SUGGESTIONS FOR AN APPENDIX TO THE DAB 6 OR DAB 7, POLYETHYLENEGLYCOL-400-MONOSTEARATE, POLYHYDROXYETHYLATED CASTOR OIL. [1960] 5p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-16612

Trans. of a reprint of die Pharmazeutische Industrie (West Germany) 1955, v. 17 [no. 9, p. 370].

Moriya, Hiroshi, Deguchi, Masazo, and Asano, Hideichi.
THE AMOUNT OF CALLICREIN CONTAINED IN VARIOUS ORGANS AND ITS ISOLATION AND PURIFICATION, tr. by William Himel. Rept. 1 on Chemical Studies on Callicrein. 11 Feb 59, 17p. (1 fig. omitted) 12 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-12984

Trans. of Yakugaku Zasshi (Japan) 1958, v. 78, no. 4, p. 346-350.

Moriya, Hiroshi and Shimazawa, Eiichiro.
PURIFICATION BY ZONE ELECTROPHORESIS, tr. by W. Himel. Rept. no. 3 on Chemical Studies on Callicrein. 27 July 59, 9p. (5 figs. omitted) 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18577

Trans. of Yakugaku Zasshi (Japan) 1959, v. 79, no. 3, p. 374-377.

Ogata, Koreshiro, Murakami, Kei, and Tsuzaki, Kunihide.
ELECTRICAL ACTIVITY IN THE REGION CENTERING AROUND THE BRAIN STEM FROM THE ADMINISTRATION OF VARIOUS METALS AND METALLOIDS, tr. by W. Himel. Rept. no. 11 of Summary of Repts. on the Study of Minamata Disease. 3 Dec 59, 2p.
Order from LC or SLA mi$1.80, ph$1.80 60-13097

Trans. of mono. ed. by Kansuke Sera, 20 Aug 59, p. 16.

Experiments, using rabbits, with various metals and metalloids considered to be the cause of Minamata disease are described. Results with aqueous solutions of thalium acetate, manganese sulfate, or sodium selenite were inconclusive.

Sasaki, Toyosaku.
CHEMICAL STUDIES ON THE POISON OF FORMOSAN COBRA. III. AMINO ACID COMPOSITION OF PURIFIED POISON (NEUROTOXIN) (Taiwan Kobura Jodoku no Kagaku-teki Kenkyu (Dai 3-po) Seisei Jadoku no Amino-San Sosei ni Tsuite) tr. by J. R. W. [1959] [6]p. (2 figs. 1 table omitted) 8 refs. H-2852C.
Order from OTS $0.50 59-21027

Trans. of Yakugaku Zasshi (Japan) [1957] v. 77, p. 848-850.

Suzuki, Tomoji, Hagihara, Fumio, and Takagi, Yasushi.
PAPER ELECTROPHORESIS OF SNAKE VENOMS AND THEIR ENZYME ACTIVITIES (Jadoku Tanpaku no Kenkyu (dai ippo). Jadoku no Denki Eido Narabi ni Kōso Sayō ni Tsuite) tr. by J. R. W. Study no. 1 on Snake Venom. [1959] [10]p. (4 figs. omitted) 7 refs. H-2352B.
Order from OTS $0.50 59-21026

Trans. of Yakugaku Zasshi (Japan) 1954, v. 74, p. 167-171.

Takahashi, H. and others.
CLINICAL APPLICATION OF TESPAMINE (TRIETHYLENETHIOPHOSPHORAMIDE, THIO-TEPA) ESPECIALLY, INFLUENCES OF COBALTGREEN-POLE AND ADRENOCORTICAL STEROID ON THE LEUCOPENIA INDUCED BY THE ADMINISTRATION OF THIO-TEPA. [1960] 18p.
Order from ATS $28.95 ATS-15M41J

Trans. of Naika Hokan (Japan) 1960, v. 7, no. 2, p. 176-183.

Takeuchi, Tadao.
DISCUSSION ON THE CAUSE OF MINAMATA DISEASE FROM THE STANDPOINT OF PATHOLOGIC STUDIES, tr. by W. Himel. Rept. no. 3 of Summary of Repts. on the Study of Minamata Disease. 13 Nov 59, 8p.
Order from LC or SLA mi$1.80, ph$1.80 59-22580

Trans. of mono. ed. by Kansuke Sera, 20 Aug 59, p. 5-8.

Uchida, Makio, Inoue, Toshi, and Hirakawa, Kiyoshi.
ETIOLOGIC AGENTS OF MINAMATA DISEASE, tr. by W. Himel. Rept. no. 6 of Summary of Repts. on the Study of Minamata Disease. 13 Oct 59, 4p.
Order from LC or SLA mi$1.80, ph$1.80 59-19895

Trans. from mono. ed. by Kansuke Sera, 20 Aug 59.

Radiobiology

Korogodin, V. I., Tarusov, B. N., and Tambiyev, A. Kh.
RELATIONSHIP BETWEEN POST-RADIATION REVIVIFICATION REACTIONS AND THE DENSITY OF THE CELLULAR SUSPENSION, TEMPERATURE AND OXYGEN TENSION (O Zavisimosti Reaktsiy Postradiatsionnogo Vosstanovleniya ot Gustoty Kletochnoy Suspenzii, Temperatury i Kislorodnogo Napryazheniya). [1960] 12p. (foreign text included) 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 UCRL-tr-521

Trans. of Biofizika (USSR) 1959, v. 4, no. 2, p. 224-227.

The results of the study of the relationship between the rate of post-irradiation restauration of resting yeast cells and the density of their suspension, the temperature and oxygen tension are demonstrated. The degree of the influence of these factors varies in response to different doses; this may be in relation to the simultaneous development of several reactions of radiation injury, with different kinetic parameters, in the irradiated cells. (Authors)

Domotskiy, A. M.
ARTERIAL SUTURE IN ACUTE RADIATION SICKNESS. 30 June 60, 5p. 1 ref. JPRS: 3488.
Order from OTS $0.50 60-31339

Trans. of Zdravookhraneniye Belorussii (USSR) 1960, [v. 6] no. 1, p. 23-25.

Nikol'skiy, V. V., Nakolayeva, N. A., and Chumakova, L. M.
EFFECT OF IONIZING RADIATION ON THE LIPID COMPOSITION OF THE BLOOD AND LIVER OF THE RAT. 11 July 60, 7p. 5 refs. JPRS: 5004.
Order from OTS $0.50 60-11871

Trans. of Ukrayins'kyy Biokhimichnyy Zhurnal (USSR) 1959, v. 31, no. 6, p. 877-882.

Novikova, A. P.
THE CHARACTERISTICS OF THE LOCAL (SKIN) REACTION IN THE OFFSPRING OF IRRADIATED DOGS. 28 June 60, 12p. 12 refs. JPRS: 2930.
Order from OTS $0.50 60-11827

Trans. of Patolog[icheskaya] Fiziol[ogiya] i Eksper[imental'naya] Terapiya (USSR) 1960, v. 4, no. 1, p. 28-32.

Rodionov, V. M., Orlova, L. O., and Tuul', L. I.
THE EFFECT OF DIFFERENT DOSES OF X-IRRADIATION ON THE CORTICOSTEROID SECRETION IN RABBITS. 30 June 60, 11p. 9 refs. JPRS: 2929.
Order from OTS $0.50 60-11826

Trans. of Patolog[icheskaya] Fiziol[ogiya] i Eksper[imental'naya] Terapiya (USSR) 1960, v. 4, no. 1, p. 24-28.

Sviderskaya, T. A., Zhuk, Ye. C., and Filipson, I. N.
THE USE OF ULTRAVIOLET RADIATION OF DIFFERENT SPECTRAL COMPOSITION FOR REDUCING THE SEQUELS OF RADIATION INJURY. 18 July 60, 13p. JPRS: 5023.
Order from OTS $0.50 60-11917

Trans. of Gigiyena i Sanitariya (USSR) 1960, v. 25, no. 2, p. 27-33.

Experiments with guinea pigs reveal that in animals subjected to prophylactic UV radiation there is an increase of resistance in the organism to the effect of 450 r gamma radiation.

Surgery

Gritsman, Yu. Ya. and Gorbovitskiy, Ye. B.
KIDNEY TRANSPLANTATION IN CLINICAL PRACTICE (STATUS OF THE PROBLEM). 26 July 60, 11p. 34 refs. JPRS: 3600.
Order from OTS $0.50 60-31437

Trans. of Eksperimental'naya Khirurgiya (USSR) 1960, v. 5, no. 1, p. 58-64.

This general review of the literature includes two brief case histories of successful kidney transplants effected by Soviet surgeons.

Ostroverkhov, G. Ye. and Sergeyev, V. M.
ON THE PROSPECTIVE PUBLISHING PLAN FOR SURGICAL LITERATURE. 21 July 60, 10p. 55 refs. JPRS: 3585.
Order from OTS $0.50 60-31426

Trans. of Khirurgiya (USSR) 1959, v. 35, no. 9, p. 133-138.

This article by the director of Medgiz (USSR state publishing house for medical literature) lists important texts recently published, or about to be published, and indicates lacunae in Soviet surgical literature. Shortcut publishing procedures which have been adopted are briefly noted.

Samsonenko, R. V.
ANALYSIS OF THE INTERRELATIONSHIP BETWEEN RESIDUAL MUSCLE AND TRANSPLANTED TISSUE IN RESTORATION OF MUSCLES BY THE METHOD OF GRAFTING PULVERIZED MUSCLE TISSUE. 4 June 60, 14p. 12 refs. JPRS: 2746.
Order from OTS $0.50 60-11699

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1960 [v. 37] no. 1, p. 48-57.

Zoology

Hotta, Hideyuki and Ogawa, Toru.
ON THE STOMACH CONTENTS OF THE SKIPJACK, tr. by Grace Y. Beard. [1959] [33]p. 19 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-19338

Trans. of [Tohoku Kaiku Suisan Kenkyusho Kenkyu Hokoku] (Japan) 1955, no. 4, p. 62-82.

Kawasaki, Tsuyoshi.
ON THE MIGRATION AND THE GROWTH OF THE SKIPJACK, KATSUWONUS PELAMIS (LINNAEUS) IN THE IZU AND BONIN SEA AREAS AND THE NORTHEASTERN SEA AREA ALONG THE PACIFIC COAST OF JAPAN, tr. by Grace Y. Beard. 21 Aug 59 [34]p. 10 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-19341

Trans. of [Tohoku Kaiku Suisan Kenkyusho Kenkyu Hokoku] (Japan) 1955, no. 4, p. 101-119.

Kawasaki, Tsuyoshi.
ON THE MIGRATION AND THE GROWTH OF THE SKIPJACK, KATSUWONUS PELAMIS (LINNAEUS) IN THE SOUTH-WESTERN SEA AREA OF JAPAN, tr. by Grace Y. Beard. [1959] [34]p. 7 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-19342

Trans. of [Tohoku Kaiku Suisan Kenkyusho Kenkyu Hokoku] (Japan) [1955] no. 4, p. 83-100 (Tohoku Regional Fisheries Research Lab. Contributions, no. 44).

CHEMISTRY

CHEMICKE LISTY (CZECHOSLOVAKIA) 1960 [VOL. 54] NO. 1, SELECTED ABSTRACTS [Chemical Journal]. [1960] [8]p. CZ/8-60-1-(1-2, 6)/14.
Order from LC or SLA mi$1.80, ph$1.80 60-17859-1

Consists of selected abstracts in English.

JOURNAL OF APPLIED CHEMISTRY OF THE USSR. 1959, VOL. 32, NO. 8, P. 1687-1936. [1960] 1v.
Order from CB $7.50, $60.00/year

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1959, v. 32, no. 7, p. 1649-[1886].

JOURNAL OF GENERAL CHEMISTRY OF THE USSR, 1959, VOL. 29, NO. 7, P. 2075-2426. 1960, 1v.
Order from CB $10.00, $90.00/year

Trans. of Zhurnal Obshchey Khimii (USSR) 1959, v. 29, no. 7, p. 2109-[2460].

JOURNAL OF GENERAL CHEMISTRY OF THE USSR, 1959, VOL. 29, NO. 8, P. 2427-2769. Aug 59, 1v.
Order from CB $10.00, $90.00/year

Trans. of Zhurnal Obshchey Khimii (USSR) 1959, v. 29, no. 8, p. 2465-[2804].

REVISTA DE CHIMIE (RUMANIA) 1958 [VOL. 9] NO. 9 SELECTED ABSTRACT [Chemical Review]. [1960] [1]p. RUM/3-9-9-9/25.
Order from LC or SLA mi$1.80, ph$1.80 60-17094-9

Consists of selected abstract in English.

Analytical Chemistry

Fedoseyev, P. N. and Ignatenko, L. S.
MICROMETHODS FOR THE QUANTITATIVE DETERMINATION OF CARBON, HYDROGEN AND NITROGEN IN ORGANIC COMPOUNDS WITH THE USE OF VACUUM. [1960] 9p.
Order from ATS $13.75 ATS-65M42R

Trans. of Akad[emiya] Nauk Turkmen[skoy] SSR [Ashkhabad]. Izvest[iya] 1959, no. 1, p. 45-52.

Fioletova, A. F.
LUMINESCENCE ANALYSIS OF BITUMENS. [1960] 4p.
Order from ATS $8.75 ATS-11M42R

Trans. of Akad[emiya] Nauk SSSR. Izvest[iya]. Ser[iya] Fiz[icheskaya] 1949, v. 13, no. 2, p. 254-256.

Korshun, M. O. and Klimova, V. A.
RAPID MICRO-METHOD OF DETERMINING CARBON AND HYDROGEN, tr. by G. S. Smith. [1960] 11p. 7 refs. M1019.
Order from LC or SLA mi$2.40, ph$3.30 60-13722

Trans. of Zh[urnal] Anal[iticheskoy] Khimii (USSR) 1947, v. 2, no. 5, p. 274-280.

An apparatus and method are described for determining carbon and hydrogen in organic materials containing only carbon, hydrogen, and oxygen. The method is applicable to the combustion of both solids and high-boiling point liquids, and the combustion takes approximately 10 minutes.

Makhovka, P. P.
ANALYSIS OF A MIXTURE OF VANADIUM OXIDES (Analiz Smesi Okislov Vanadiya). June 60 [4]p. 3 refs. RTS 1448.
Order from LC or SLA mi$1.80, ph$1.80 60-19891

Trans. of Zavodskaya Laboratoriya (USSR) 1957, v. 23, no. 5, p. 533-535.

A method is presented for the analytic separation of the components in the mixture $V_2O_3 + VO_2 + V_2O_5$.

Oehme, Friedrich.
THE DETERMINATION OF WATER IN PIGMENT: PASTES AND PRINTING INKS BY A MODIFIED EXTRACTION METHOD. 19 May 60 [8]p. (4 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-16479

Trans. of Farbe u[nd] Lack (West Germany) 1960, v. 66, no. 3, p. 142-145.

A method was developed for measuring the moisture content of pigments. The method consists of extracting water from the pigment with dioxane and measuring the variation of the dielectric constant of the ex-

tract before and after removal of the water. The procedure is facilitated by extracting the water over a column of Linde molecular sieves.

Okada, Tomio, Nakai, Shigeo, and Kohzuma, Tsundhide.
A NEW METHOD FOR RAPID DETERMINATION BY SPECTROGRAPHIC ANALYSIS. [1959] [12]p. 4 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-19346

Trans. of Bunseki Kagaku (Japan) 1956, v. 5, no. 4, p. 203-205.

While investigating the theoretical aspect of the time consumed for an analysis it was discovered that quantitative analysis can be relatively simply and rapidly performed by using two stepped filter. The results obtained by using this method in the quantitive analysis of manganese in steel and the analysis of barium in oil show that the mean relative error from the analysis of manganese content in steel was ±3.90% and that of barium in oil was ±8.76.

Portnov, M. A.
CONFERENCE ON pH MEASUREMENTS. 30 June 60, 7p. JPRS: 2957.
Order from OTS $0.50 60-11847

Trans. from Meditsinskaya Promyshlennost' SSSR, 1950, no. 2.

Inorganic Chemistry

PRODUCTION OF HYDROFLUORIC ACID AND POTASSIUM HYDROFLUORIDE AT WUHAN UNIVERSITY CHEMICAL PLANT. PT. I, THE PRODUCTION OF HYDROFLUORIC ACID. PT. II, THE PRODUCTION OF POTASSIUM HYDROFLUORIDE
5 July 60, 14p. 9 refs. JPRS: 2918.
Order from OTS $0.50 60-11818

Trans. of Wu Han Ta Hsüeh Tzu Jan K'o Hsüeh Hsüeh Pao (Chinese People's Republic) 1959, no. 5, p. 118-125.

Part I: A procedure for producing hydrofluoric acid by the reaction $CaF_2 + H_2SO_4 \longrightarrow CaSO_4 + 2HF$ is described. Solutions to the problems of gas leakage, the resulting $CaSO_4$ scale, and the refining of the crude product are presented with the specifications of the resulting HF. Part II: A method of mass producing KHF_2 was developed which uses the reaction $KOH + 2HF \longrightarrow KHF_2 + H_2O$ + heat. Silver, copper, plastic, and glass apparatus with paraffin coatings are used, and the problem of the large amount of heat released in the reaction is solved by the use of a cold water bath and by controling the introduction speed of the raw materials. The test methods and specifications for the resulting product are given.

Dombrovskaya, N. S. and Mitel'man, M. R.
INTERACTION OF WATER GLASS AND SODIUM FLUOSILICATE IN ACID-RESISTANT CEMENTS. [1960] 9p.
Order from ATS $12.40 ATS-40M42R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1953, v. 26, no. 9, p. 899-906.

Morozov, I. S. and Toptygin, D. Ya.
REACTION OF TITANIUM TETRACHLORIDE WITH TANTALUM, NIOBIUM AND ALUMINIUM CHLORIDES (Vzaymodeystviye Chetyrekhkhloristogo Titana s Khloridami Tantala, Niobiya i Alyuminiya). Jan 59 [7]p. 7 refs. C. T. S. no. 604.
Order from LC or SLA mi$1.80, ph$1.80 60-23083

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1957, v. 2, no. 8, p. 1915-1921.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as AEC-tr-3741 [1959] 9p.

The systems $TiCl_4$ - $TaCl_5$, $TiCl_4$ - $NbCl_5$ and $TiCl_4$ - $AlCl_3$ were studied by solubility measurements and by thermal analysis, and the systems $TiCl_4$ - $TaCl_5$ - $NbCl_5$, $TiCl_4$ - $NbCl_5$ - $AlCl_3$ and $TiCl_4$ - $TaCl_5$ - $AlCl_3$ were studied by thermal analysis. The solubilities of $TaCl_5$ and $NbCl_5$ in $TiCl_4$ are of the same order of magnitude. The solubility of $NbOCl_3$ in $TiCl_4$ at low temperatures is less than a few hundredths of a percent. Aluminium chloride and sodium chloride react in solution in $TiCl_4$. The solubilities of $TaCl_5$ and $NbCl_5$ in $TiCl_4$ are raised by $AlCl_3$. (Author)

Organic Chemistry

Andryanov, K. A. and Petrashko, A. I.
REACTION OF ALKYLCYCLOSILOXANES WITH TITANIUM TETRACHLORIDE. [1960] 3p.
Order from ATS $5.00 ATS-84M42R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 131, no. 3, p. 561-562.

Andryanov, K. A.
RECENT WORK ON THE SYNTHESIS OF HETERO-CHAIN ORGANO-ELEMENT POLYMERS (Novoye v Oblasti Sinteza Geterotsepnykh Elementoorganicheskikh Polimerov). Nov 58 [44]p. 138 refs. C. T. S. no. 524.
Order from LC or SLA mi$3.30, ph$7.80 60-17442

Trans. of Uspekhi Khimii (USSR) 1957, v. 26, no. 8, p. 895-922.

A survey based on Soviet and non-Soviet sources.

Andryanova, T. I. and Roginskiy, S. Z.
A C^{14} TRACER STUDY OF THE REACTION MECHANISM OF THE CONVERSION OF PARAFFINS OVER AN ALUMINA-SILICA CATALYST. [1960] [11]p. 14 refs. M931.
Order from LC or SLA mi$2.40, ph$3.30 60-13805

Trans. of [Problemy Kinetiki i Kataliza] (USSR) 1957, v. 9, p. 152-161.

The catalytic cracking of n-octane in presence of ethylene, n-octylene and alkyl halides is investigated. Secondary reactions are discussed in the light of a comparative study of the cracking of n-octane and n-cetane. A radioisotopic study is also made of the hydrogen transfer reaction in the binary systems comprising ethylene on the one hand and ethane, n-butane and n-octane on the other. (Author)

Baturo, V. A. and Rakovskiy, V. Ye.
CHEMISTRY OF PEAT-FORMING MATERIALS. II. FORMATION OF HUMIC ACIDS AND INDIVIDUAL CHARACTERISTICS OF PEAT-FORMING MATERIALS (Khimiya Torfoobrazovateley. II. Obrazovaniye Guminovykh Kislot i Individual'nyye Svoystva Torfoobrazovateley). June 60 [20]p. 33 refs. RTS 1400.
Order from LC or SLA mi$2.40, ph$3.30 60-19881

Trans. of A[kademiya] N[avuk] BSSR [Minsk]. Instytut Torfa. Trudy, 1957, v. 6, p. 52-67.

The green and decayed parts of various lowland and upland types of peat-forming vegetation were studied. The changes undergone by the plants in the initial stages of humification were (1) decrease in bitumen content; retention of readily hydrolyzed carbohydrates; (2) synthesis of humic acids, shown by an increased content in the decayed tissues; (3) varying behaviour of cellulose (decreasing in sedges, increasing in Sphagnum medium, constant in the green and decayed layers of Calliergonella cuspidata and Dicranum undulatum) and (4) synthesis of non-hydrolyzable material, as shown by increased unhydrolyzed residue. The peat-forming cinquefoil was exceptional: comparison of the surface and underground growth did not reveal the progress of decay, but rather the different chemical composition of the two parts of the plant. The specific peculiarities of different types of vegetation accounted for their tendency to form larger or smaller proportions of humic acids, the percentage of which in the plants depends primarily on the species considered. Humic acids from different plants differed in carboxyl and phenolic-hydroxyl content. The proportion of peripheral groups found in humic acids isolated from peat-forming vegetation was within the range found in humic acids from various samples of peat. The humic acids from plants closely resemble those from peat. The humic acids from peat-forming vegetation contained 0.63 to 3.55% of nitrogen.

Böttger, Rudolph and Will, Heinrich.
CONCERNING A NEW ACID RELATED TO THE PICRIC ACID (TRINITROPHENOL) (Über eine neue, der Pikrinsäure Nahestehende Säure) tr. by Marcel I. Weinreich. 27 May 59, 31p. 2 refs.
Order from LC or SLA mi$3.00, ph$6.30 SCL-T-252

Trans. of [Justus Liebig's] Annalen der Chemie (Germany) 1846, v. 58, no. 3, p. 273-300.

Cieslak, Jerzy.
STRUCTURE OF YANGONIN II: SYNTHESIS OF COMPOUNDS BELONGING TO THE YANGONIN AND PSEUDOYANGONIN GROUPS. [1960] 14p. 11 refs.
Order from SLA mi$2.40, ph$3.30 60-16592

Trans. of Roczniki Chemii (Poland) 1958, v. 32, p. 837ff.

The physio-chemical properties and structure of yangonin, 4-methoxy-6-(p-methoxystyryl)-α-pyrone, which belongs to the 2H-pyrane-2, 4(3H)-dione group of isometric ethers were studied. Lactones of yangonin, desmethoxy yangonin, dihydroyangonin, dihydrodesmethoxy yangonin, and the isomeric methyl ethers of these lactones were prepared. These derivatives of 2H-pyrane-2, 4(3H)-dione, substituted in position 6, exhibit α, γ-pyrone tautomerism and indicate that natural yangonin is a methyl ether of yangonic lactone and belongs to the α-pyrone group.

Civera, Marco and Torello, Carlo
THE NITRATION OF 2-METHYLNAPHTHALENE, tr. by George R. Loehr. Nov 57 [11]p. 8 refs. Picatinny Arsenal Trans. No. 18.
Order from LC or SLA mi$2.40, ph$3.30 59-12439

Trans. of Gazzetta Chimica Italiana, 1956, v. 86, nos. 5-7, p. 350-357.

Three isomeric tetranitro derivatives were obtained by carrying the nitration of 2-methylnaphthalene to completion, under certain controlled conditions. The method of preparation and properties of these derivations are described below. Ultraviolet absorption curves are also reported, as well as the characteristics of the additive compounds which two of the derivatives form with anthracene. (Author)

Fusco, Raffaello and Bianchetti, Giuseppe.
RESEARCHES ON AS-NAPHTHOTRIAZINES. ARTICLE I. [2,1-E]-AS-NAPHTHOTRIAZINE AND [1,2-E]-AS-NAPHTHOTRIAZINE (Recerche sulla as-Naftotriazine. [2,1-e]-as-Naftotriazina e [1,2-e]-as-Naftotriazina. Rept. no. 9 on Asymmetrical Triazines. (Sulle Triazine Asimmetriche). 11 Mar 59, 13p. 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-14706

Trans. of Gazzetta Chimica Italiana, 1957, v. 87, no. 4-41, p. 438-445.

A new synthesis structural arrangement recently perfected for the benzotriazine ring (Gazz. chim. ital. 86: 484, 1956) has been extended to the naphthotriazine series. The nitronaphthylazochloroacetic esters which provide with ammonia the corresponding ethyl nitronaphthylazoglycinates are obtained from 1-nitro-2-naphthylamine and 2-nitro-1-naphthylamine by coupling the appropriate diazo radicals with chloroacetoacetic ester. The reduction of such esters, followed by mild oxidation with nitrous acid, produces the esters of naphthotriazine-carboxylic acid from which the two new heterocyclic trinuclear compounds [2,1-e]- and [1,2-e]-as-naphthotriazines which melt at 124.5°C. and 140.1°C., respectively, are obtained by saponification and decarboxylation. (Author) (See also 59-14707)

Goebel, C. G., Brown, A. C., and others.
IMPROVED PROCESS AND APPARATUS FOR THE PREPARATION OF ALIPHATIC CARBOXYLIC ACIDS. [1960] 27p. 1 ref.
Order from LC or SLA mi$2.70, ph$4.80 60-16616

Trans. of French patent 1,096,252, 17 June 55.

Gonikberg, M. G., Zhulin, V. M., and El'yanov, B. S.
RELATION BETWEEN THE CRYSTALLIZATION OF ALDEHYDES AND THE FORMATION OF POLYMERS OF THE POLYOXYMETHYLENE TYPE FROM THEM. [1960] 5p.
Order from ATS $8.00 ATS-82M42R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 132, no. 2, p. 353-356.

Kitawaki, Rokuro.
ON THE TWO ISOMERS OF TRIMETHYLMELAMINE. Rept. no. 56 of Studies on Cyanamide Derivatives. [1960] 18p. 12 refs.
Order from SLA mi$2.40, ph$3.30 60-16676

Trans. of [Nihon] Kagaku Zasshi (Japan) 1960, v. 81, no. 1, p. 175-179.

When trimethylisomelamine is retained in a fused state for 2 or 3 hours, it isomerizes to trimethylmelamine. When the polymer of monomethylcyanamide is hydrolyzed with an inorganic acid, it decomposes into trimethylisocyanuric acid and ammonia; when the substance thus retained in a fuzed state was similarly hydrolyzed, it decomposed into cyanuric acid and methylamine. As a result it was reaffirmed that the former was trimethylisomelamine and the latter was the isomer, trimethylmelamine. It was thus proved that trimethylisomelamine isomerizes to trimethylmelamine when retained in a fused state. The trimethylmelamine was identified from its ultraviolet- and infrared absorption spectra. (Author) (Lectured at the Ninth Annual Conference of the Chemical Society of Japan, in April, 1956.)

Maciorewicz, Zdzislaw.
SYNTHESIS OF THE LACTONE OF THE PARENT SUBSTANCE OF YANGONIN. [1960] 34p. 11 refs.
Order from SLA mi$3.00, ph$6.30 60-16795

Trans. of Roczniki Chemii (Poland) 1950, v. 24 [no. 1/6] p. 144-166. (Reprint from Proceedings of the Warsaw Scientific Society, 1939, v. 1-3).

The lactone of the parent substance of yangonin was synthesized from β-chloro-cinnamyl-acrylic acid. The product thus obtained proved to be α'-p-methoxy-styryl-α-methoxy-γ-pyrone. (Author)

Maeda, Shozo.
PARTIAL METHANOLYSIS AND HYDROLYSIS OF ETHYLTRICHLOROSILANE. Rept. no. 4 of Studies on Organosilicon Esther Compounds. [1960] [14]p. (foreign text included) 2 refs.
Order from SLA mi$2.40, ph$3.30 60-16743

Trans. of [Kogyo Kagaku Zasshi (Japan) 1959, v. 62, p. 435-438].

Methanol and triethylchlorosilane were reacted at the mol ratios of 0.5, 1.0, 1.5 and 2.0 and the results were found to be in good agreement with Fuoss's theoretical equation (J. Am. Chem. Soc. 65: 2406, 1943) for successive competitive reaction. The velocity constant ratios were 1 : 1/5 : 1/100. After partial methanolysis, the product was subjected to hydrolysis and condensation-polymerization, in which process, the average molecular weight of soluble semicondensate and the viscosity of thinned solution were measured. The relation between the limiting viscosity value and the average molecular weight was found to be $[\eta] = KM^{\alpha}$. The value of α was at its maximum when $CH_3OH : C_2H_5SiCl_3 = 1.5 : 1.0$ and the soluble polymer proved to be most stable when its α value was in this neighborhood. (Author)

Margolis, L. Ya. and Roginskiy, S. Z.
MECHANISM OF THE CATALYTIC OXIDATION OF SIMPLE UNSATURATED HYDROCARBONS ON METALS AND SEMI-CONDUCTORS. [1960] [11]p. 19 refs. M904.
Order from LC or SLA mi$2.40, ph$3.30 60-13778

Trans. of [Problemy Kinetiki i Kataliza] (USSR) 1957, v. 9, p. 107-116.

The use of isotopes (C^{14} and O^{18}) in a study of the catalytic oxidation of the simplest unsaturated hydrocarbons (mainly ethylene) on metals (Ag, Pt) and semi-conductors (V_2O_5, Cu_2O) has shown that many common assumptions about the mechanisms of such reactions are false. New detailed mechanisms of oxidation of ethylene on silver and metal oxides are put forward. (Author)

Matsuda, Minoru, Otsu, Takayuki, and Imoto, Minoru.
ON THE COPOLYMERIZATION OF ACRYLAMIDE WITH VINYL ACETATE. Rept. no. 37 of Studies on the Polymerization of Vinyl. [1960] 13p. 13 refs.
Order from SLA mi$2.40, ph$3.30 60-16677

Trans. of Kobunshi Kagaku (Japan) 1959, v. 16, no. 171, p. 437-440.

Copolymerization of acrylamide (M_1) with vinyl acetate (M_2) was conducted in anhydrous methanol at 50°C using azobisisobutyronitrile as the initiator. The compositions of the product copolymers were calculated from their nitrogen contents, and when r_1 and r_2 were sought by the Fineman-Ross method and the Mayo-Lewis method, we obtained, $r_1 = 7.5$ and $r_2 = 0.07$. The Q and e values of acrylamide were calculated to be: $Q = 1.32$ and $e = +0.79$. Copolymers produced by every possible composition of the two monomers were all water-soluble, and by alkali saponification they changed to acrylamide, acrylic acid, vinyl acetate, and vinyl alcohol copolymers. (Author) (This paper was read at the Conference on Synthetic Fibers (Osaka), held in November, 1956.) (See also 60-10116)

Mazzanti, G., Valvassori, A. and others.
ANIONIC COORDINATION COPOLYMERIZATION OF PROPYLENE WITH 1-BUTENE. [1960] 20p. 13 refs.
Order from CTS(Chem) $16.40 CTS(Chem)-135

Trans. of [la] Chimica e l'Industria (Italy) 1960, v. 42, no. 5, p. 468-474.

This paper describes the preparation of linear, amorphous, high molecular weight copolymers of propylene with 1-butene, in the presence of catalysts prepared from vanadium halides and aluminum trialkyls. The values found for the reactivity ratios in this copolymerization are in good agreement with those predicted on the basis of the reactivity ratios of the ethylene-propylene and ethylene-1-butene copolymerizations. The validity of the method of predicting the reactivity ratios that we have proposed is thus confirmed as it is applied to ionic copolymerizations in which the product of the reactivity ratios is very close to unity. (Author)

Natta, G., Mazzanti, G. and others.
DISTRIBUTION OF THE MONOMERIC UNITS IN ETHYLENE-PROPYLENE COPOLYMERS. Note 7 on the Copolymerization of Ethylene with the Aliphatic Alpha Olefins. [1960] [23]p. 13 refs.
Order from SLA mi$2.70, ph$4.80 60-16775

Trans. of [la] Chim[ica] e Ind[ustria] (Italy) 1960, v. 42, no. 2, p. 125-132.

The distribution of the sequence of the monomeric units in the ethylene-propylene copolymers is examined, as they are obtained in the presence of catalysts prepared from trialkyl aluminum and vanadium tetrachloride. The values of the distribution functions of the sequences for these copolymers are compared with those predictable for an ideal case in which the product of the reactivity ratios is equal to 1, and in addition with those predictable for values of such products equal respectively to 10 and 0.1. This comparison showed that when the product r_1 and r_2 diminishes, the compositions are equal, the formation of amorphous copolymers is favored, this being an important characteristic in the case of those polymers intended to be used for the production of elastomers. The theoretical requirements regarding the distribution of the sequences of different length proved to be in accord with the values for the length of the sequences of the methylene groups determined by means of infra red analyses within the sensitivity limits of this method. A final qualitative confirmation is seen in the absence of crystallinity in the copolymers containing more than 20% of propylene. (Author) (See also 60-22352)

Natta, G., Crespi, G., and Bruzzone, M.
ELASTOMERS FROM CHLOROSULFONYLATED POLYMERS AND COPOLYMERS OF ALPHA-OLEFINS. [1960] 13p. 10 refs.
Order from CTS(Chem) $14.25 CTS(Chem)-134

Trans. of [la] Chimica e l'Industria (Italy) 1960, v. 42, no. 5, p. 463-467.

Results obtained in the chlorosulfonylation and the subsequent vulcanization of atactic poly-alpha-olefins and of copolymers of ethylene and alpha-olefins are reported. The curing of these polymers by chlorosulfonylation was used mainly for a preliminary evaluation of their elastomeric properties as a function of their chemical composition and structure. This was made possible by the low content of chlorine and sulfonyl chloride groups required for adequate vulcanization, by the high molecular weight, and by the absence of crystallinity in the polymers studied. (Author)

Natta, G., Beati, E. and others.
GRAFT POLYMERS: POLYSTYRENE GRAFTED ON POLYBUTENE. [1960] 10p. 4 refs.
Order from CTS(Chem) $10.80 CTS(Chem)-129

Trans. of [la] Chimica e l'Industria (Italy) 1960, v. 42, no. 4, p. 348-352.

A peroxidation method applicable to linear high-molecular weight polybutenes that are partially crystalline, due to their isotactic configuration, is described. The peroxidized polybutenes were used as initiators in the polymerization of styrene. The resulting reaction products, consisting of polystyrene grafted to polybutene and of styrene homopolymer, are characterized by high impact strength and good hardness. A method for the separation of the graft polymer from the homopolymer is also described. (Author)

Natta, G., Mazzanti, G. and others.
POLYMERIZATIONS PROMOTED BY METAL AMIDES AND THEIR STEREOSPECIFICITY. [1960] 16p. 18 refs.
Order from CTS (Chem) $14.80 CTS(Chem)-133

Trans. of [la] Chimica e l'Industria (Italy) 1960, v. 42 [no. 5] p. 457-462.

A description is given of the polymerization of a few olefinic and acrylic monomers, and also of their stereospecific polymerization, with catalysts prepared from metal amides in place of metal-organic compounds. Amides of lithium and of magnesium alone, in the absence of compounds of transition metals, promote the stereospecific polymerization of a few alkyl acrylates and methacrylates. The nature of the terminal groups present in the polymers proves that the polymerization occurs by an anionic coordination mechanism. Catalysts prepared from α-$TiCl_3$ and $Al[N(C_6H_5)_2]_3$ promote the polymerization of ethylene and the stereospecific polymerization of propylene, although with a considerably lower activity than catalysts prepared from metal-organic compounds. (Author)

Nesmeyanov, A. N., Kazitsyna, L. A. and others.
DETERMINATION OF THE POSITION OF SUBSTITUENTS IN FERROCENE DERIVATIVES FROM THEIR INFRA-RED ABSORPTION SPECTRA (Opredeleniye Polozheniya Zamestiteley v Ferrotsenovykh Soyedineniyakh po Infrakrasnym Spektram Pogloshcheniya). June 60 [6]p. 22 refs. RTS 1398.
Order from LC or SLA mi$1.80, ph$1.80 60-19567

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 117, no. 3, p. 433-436.

The infrared bands in the region of 1002 and 1108 cm^{-1} are tabulated for 33 substituted ferrocene derivatives and used as criteria in the determination of the positions of the substituents. (See also 59-10557, 59-10645, 59-21177, 59-22447)

Novikov, S. S., Faynzil'berg, A. A. and others. ISOMERIZATION OF TETRANITROALKANES. 3 Aug 60, 6p. 4 refs. JPRS: 3655.
Order from OTS $0.50 60-31632

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 132, no. 4, p. 846-849.

1, 1, 1, 3-tetranitropropane is isomerized into symmetrical tetranitropropane in the presence of ammonia, potassium acetate, or potassium methylate. The nature of the solvent has a substantial effect on the course of the reaction. If the reaction between 1, 1, 1, 3-tetranitropropane and potassium acetate is conducted in an alcoholic solution, isomerization occurs and 1, 1, 3, 3-tetranitropropane is formed with a yield of 33. 4%. If a mixture of acetone and alcohol is the solvent, isomerization does not take place, but only cleavage of a nitrogroup from the initial 1, 1, 1, 3-tetranitropropane with the formation of 1, 1. 3-trinitropropane. In the presence of potassium methylate (in methanol) 1, 1, 1, 3-tetranitropropane is isomerized into symmetrical tetranitropropane with a yield of 10. 8%.

Petrov, K. A. and Parshina, V. A. PHOSPHORUS-CONTAINING POLYESTER AND POLYAMIDE RESINS. [1960] 5p.
Order from ATS $8.00 ATS-25M42R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1960, v. 30, no. 4, p. 1342-1346.

Poroshin, K. T., Shibner, V. A. and others. SYNTHESIS OF PEPTIDES CONTAINING L-PROLINE AND GLYCINE, tr. by I. Gawronska. 18 Feb 60, 4p. 11 refs. Misc. Lit. 3105; M 1585.
Order from LC or SLA mi$1.80, ph$1.80 60-19981

Trans. of Akad[emiya] Nauk SSSR. Otd[eleniye] Khim[icheskikh] Nauk. Izv[estiya] 1959, no. 4, p. 736-738.

L-prolylglycyl-L-prolino, L-prolylglycyl-L-prolylglycine methyl ester wore synthesized. The methyl ester of L-prolylglycyl-L-proline may be subjected to polycondensation producing polymers. (Author)

Volkova, N. S. Khutareva, G. V. and others. SYNTHESIS AND STUDY OF STEREOREGULAR COPOLYMERS OF PROPYLENE AND ISOPRENE. [1960] 7p.
Order from ATS $10.75 ATS-88M42R

Trans. of Vysokomolekulyarnyye Soyedineniya (USSR) 1959, v. 1, no. 12, p. 1758-1763.

Physical Chemistry

AKADEMIYA NAUK ESTONSKOY SSR. IZVESTIYA. SERIYA TEKHNICHESKIKH I FIZIKO-MATEMATICHESKIKH NAUK, 1960, VOL. 9, NO. 1, SELECTED ABSTRACTS [News of the Academy of Sciences of the Estonian SSR. Technical and Physico-mathematical Sciences Series]. [1960] [9]p. SOV/23-60-9-1-(1-4, 6, 10)/11.
Order from LC or SLA mi$1.80, ph$1.80 60-17835-1

Consists of selected abstracts in English.

*KOLLOIDNYY ZHURNAL (USSR) 1960, V. 22, NO. 1, P. 2-132 (Colloid Journal). [1960] 1v. SOV-69-60-22-1-(1-25)/25.
Order from OTS $0.60, $3.50/year PB 141 064T-12
Foreign $0.85, $5.00/year

Consists of abstracts in English.

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR, PHYSICAL CHEMISTRY SECTION, 1959, VOL. 126, NOS. 1-6, P. 381-540. 1960, 1v.
Order from CB $35.00, $160.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 126, no. 1, p. 111-126ff; no. 2, p. 310-334ff; no. 3, p. 591-619ff; no. 4, p. 809-827; no. 5, p. 1021-1037; and no. 6, p. 1293-1308.

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR, PHYSICAL CHEMISTRY SECTION, 1959, VOL. 127, NOS. 1-6. 1960, 1v.
Order from CB $35.00, $160.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 127, no. 1, p. 124-149ff; no. 2, p. 362-389ff; no. 3, p. 589-615ff; no. 4, p. 818-840ff; no. 5, p. 1033-1070ff; and no. 6, p. 1239-1259ff.

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR, PHYSICAL CHEMISTRY SECTION, 1959, VOL. 128, NOS. 1-6. 1960, 1v.
Order from CB $35.00, $160.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 128, no. 1, p. 124-130ff; no. 2, p. 323-341ff; no. 3, p. 567-571ff; no. 4, p. 748-773ff; no. 5, p. 973-1006ff; and no. 6, p. 1214-1238ff.

*ZHURNAL FIZICHESKOY KHIMII (USSR) 1960, VOL. 34, NO. 1, SELECTED ABSTRACTS [Journal of Physical Chemistry]. [1960] [32]p. SOV/76-60-34-1-(1, 3, 5-7, 9, 11-20, 22-23, 27-29, 31, 34, 39-40, 42-44)/44.
Order from LC or SLA mi$3.00, ph$6.30 60-17860-1

Antonova, I. N., Moshkina, R. I. and others.
A STUDY OF THE MECHANISM OF THE METHANE OXIDATION REACTION USING TAGGED ATOMS. [1960] 7p.
Order from ATS $12.75 ATS-33M41R

Trans. of Problemy Kinetiki i Kataliza (USSR) [1957] v. 9, no. 1, p. 97-103.

Antonovskaya, E. I. and Sukhotin, A. M.
PECULIARITIES OF THE ANODIC ACTIVATION OF CHROMIUM AND CHROMIUM STEELS. II. EFFECT OF THE ACIDITY OF THE SOLUTION [Ob Osobennostyakh Anodnogo Aktivirovaniya Khroma i Khromistykh Staley. II. Vliyaniye Kislotnosti Rastvora]. [1960] 5p.
Order from ATS $8.00 ATS-63M41R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 8, p. 1842-1846.

Avdeyenko, M. A. and others.
CATALYTIC ACTIVITY OF METALS IN THE HOMOMOLECULAR ISOTOPIC EXCHANGE OF HYDROGEN. [1960] [16]p. 24 refs. M903.
Order from LC or SLA mi$2.40, ph$3.30 60-13777

Trans. of [Problemy Kinetiki i Kataliza] (USSR) 1957, v. 9, p. 61-75.

The isotopic exchange reaction between hydrogen and deuterium has been used to determine the specific catalytic activity of a series of metals with the object of correlating this property with their position in the periodic table, and of comparing it with their activity with respect to other, more complicated, reactions in which molecular hydrogen takes part. (Author)

Bartunek, Richard.
ABOUT REACTION, SWELLING AND SOLUBILITY OF CELLULOSE IN THE SOLUTIONS OF ELECTROLYTES, tr. by Z. C. Prusas. 11 July 60 [17]p. 10 refs.
Order from SLA mi$2.40, ph$3.30 60-16758

Trans. of das Papier (West Germany) 1953, v. 7, no. 9/10, p. 153-158.

Connections were found between cellulose and the hydrates of electrolytes, especially in the case of nitric acid. An explanation for the phenomena of swelling and the phenomena of dissolving is given which considers the expansion of hydration water in the formation of new bonds. The swelling action by water increases and decreases, depending on the amount of eight-aggregates in water. The organo-solvents may exhibit a similar influence in swelling and dissolving of cellulose derivates.

Bogdanovskiy, G. A. and Shlygin, A. I.
MECHANISM OF ELECTROOXIDATION OF ALCOHOLS AND ALDEHYDES OVER PLATINUM. II. MECHANISM OF ELECTROOXIDATION OF ACETALDEHYDE. [1960] 5p.
Order from ATS $9.25 ATS-81M41R

Trans. of *Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1959, v. 33, no. 8, p. 1769-1773.

Budnikov, P. P. and Gorshkov, U. S.
THE EFFECT OF TEMPERATURE ON THE STABILITY OF CALCIUM SULPHOALUMINATE AND SULPHOFERRITE. [1960] [9]p. 3 refs. M1292.
Order from LC or SLA mi$1.80, ph$1.80 60-15807

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 126, no. 2, p. 337.

Hydrated calcium sulfoaluminate and sulfoferrite were completely disintegrated after 12 and 8 cycles, respectively, of alternate freezing at -17°C for 3 hr and thawing at 30°C for 2 hr. Needle-like fibers were split off along the long axis of the crystals. Free $CaSO_4$ was not formed and no chemical decomposition was seen. Calcium sulfoaluminate crystals stored for 3-1/2 yr at room temperature did not disintegrate.

Budnikov, P. P. and Gorshkov, V. S.
THE INFLUENCE OF TEMPERATURE CONDITIONS ON THE STABILITY OF CALCIUM SULPHOALUMINATE AND CALCIUM SULPHOFERRITE (Vliyaniye Temperaturnykh Usloviy na Ustoychivost' Sul'foalyuminata i Sul'foferrita Kal'tsiya) tr. by G. N. Gibson. Mar 60 [6]p. 4 refs. Library Communication no. 953.
Order from LC or SLA mi$1.80, ph$1.80 60-17689

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1959, v. 126, no. 2, p. 337-340.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 60-15807, DSIR LLU M.1292 [1960] 9p.

For abstracts see 60-15807 above.

Chapiro, A. and Stannett, V.
RADIOCHEMICAL POLYMERIZATION OF STYRENE IN THE SOLID STATE. [1960] 4p.
Order from ATS $8.55 ATS-93M41F

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1960, v. 57, p. 35-37.

Chapiro, A. and Stannett, V.
RADIOCHEMICAL POLYMERIZATIONS PROCEEDING BY AN IONIC MECHANISM. [1960] 5p.
Order from ATS $8.00 ATS-92M41F

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1959, v. 56, p. 830-833.

Cherkesov, A. I.
A SPECIFIC HIGH SENSITIVITY FLUORESCENCE REACTION IN ALUMINIUM [Spetsificheskaya Vysokochuvstvitel'naya Fluorestsentvaya Reaktsiya na Alyuminii]. [1960] 4p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-16655

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 118, no. 2, p. 309-311.
Another translation is available from LC or SLA mi$1. 80, ph$1. 80 as 59-18159, RTS-1041, June 59 [5]p.
Also available from CB.

The fluorescent reaction of aluminum ions with hydroxy-β-naphthoic (3, 2) acid was studied and indicator tests for traces of the ions are described.

Chernilovskaya, A. L. and Tsyganov, G. A.
DISTRIBUTION COEFFICIENT DURING JOINT ELECTRODEPOSITION OF METALS OF THE IRON GROUP, tr. by Leonard Shapiro. 10p. (10 figs. omitted) 7 refs.
Order from LC mi$1. 80, ph$1. 80 60-17786

Trans. of [Uzbekskiy Khimicheskiy Zhurnal] (USSR) 1958, no. 4, p. 25-32.

Experiments on the joint electrodeposition of metals of the iron group from mixtures of sulphate electrolytes were made to study the dependence of composition of the cathodic deposit of the alloys Co-Ni, Fe-Ni and Fe-Co on the composition of the electrolyte. The process of joint electrodeposition occurred with a constant distribution coefficient. The numerical value of the distribution coefficient depended on the total concentration of the electrolyte and the regime of electrolysis.

Deren, J., Haber, J., and Wilkowa, T.
INVESTIGATION OF THE ELECTRICAL CONDUCTIVITY OF ZINC OXIDE. Mar 60, 19p. 16 refs.
Order from SLA mi$2. 40, ph$3. 30 60-16807

Trans. of Zeitschrift für Physik (West Germany) 1959, v. 155, no. 4, p. 453-464.

Results of investigations of the conductivity of polycrystalline ZnO in the temperature range from 100° to 700°C under various pressure conditions are given. In the temperature range above 450°C the temperature dependence of the conductivity is determined by changes of the equilibrium state of O_2-chemisorption on the ZnO surface. At 450°C the rate of chemisorption becomes zero, therefore the surface equilibrium is "frozen" at low temperatures. The temperature dependence of the conductivity then corresponds to the thermal activation of donors. As a result of the potential gradient originating in the boundary layer interstitial zinc ions may diffuse in the direction of the surface at room temperature in which case the lattice grows. This process is the reason for the irreversible changes of conductivity observed between 20° to 450°C. (Author)

Gerischer, H. and Kappel, M.
STUDIES OF THE ELECTROLYTIC REDUCTION OF CHROMIC ACID. [1960] 12p.
Order from ATS $15. 90 ATS-69M41G

Trans. of Z[eitschrift für Elektrochem[ie] (West Germany) 1957, v. 61, no. 4, p. 463-470.

Giesen, M.
THE EFFECT OF ULTRAVIOLET RADIATION AND ITS ABSORPTION BY ULTRAVIOLET ABSORBERS IN SYNTHETIC RESINS AND PIGMENTS. [1960] 14p.
Order from ATS $19. 85 ATS-58M41DU

Trans. of Verfkroniek (Netherlands) 1960, v. 33, no. 4, p. 132-140.

Imshennik, V. S.
THE ISOTHERMAL DISPERSION OF A GAS CLOUD. 15 July 60, 9p. 8 refs. JPRS: 5049.
Order from OTS $0. 50 60-11950

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 131, no. 6, p. 1287-1290.

For the isothermal case an asymptotic solution of the dispersion of a gas cloud is shown to exist.

Inozemtsev, N. N.
IONIZATION IN LAMINAR FLAMES. 20 July 60, 13p. 7 refs. JPRS: 3572.
Order from OTS $0. 50 60-31415

Trans. of Akademiya Nauk SSSR. [Otdeleniye Tekhnicheskikh Nauk]. Izvestiya: Energetika i Avtomatika, 1960, no. 2, p. 59-66.

Measurements of conductivity with two-contact pick-ups produced quantitative data on the different parameters of ionization in laminar hydrocarbon-air flames and their dependence upon the initial parameters of the mixture. The concentration of ions and electrons in the front of the flame was two orders higher than the thermal concentration in the combustion products. The conclusion of the proportionality of the measured ionization current and the velocity of the chemical reaction was based on an analysis of the dependence of the parameters of ionization in the flame front and the normal velocity of propagation of the flame upon the initial parameters of the mixture. (Author)

Ivanov, M. Ye. and Yelukhin, N. K.
HEAT TRANSFER DURING THE EVAPORATION OF OXYGEN AND NITROGEN (Teplootdacha pri Kipenii Kisloroda i Azota) tr. by W. H. [1960] [18]p. (10 figs. omitted) 9 refs. H 2477.
Order from OTS $0.50 60-21718

Trans. of Kislorod (USSR) 1958 [v. 11] no. 3, p. 19-28.

Heat transfer during the boiling and convection in the region of the metastable state of oxygen and nitrogen was studied on single pipes under specific thermal loads up to transcritical. Examination of the boiling and convection of oxygen on pipe clusters covered the load range of condenser-evaporators in air fractioning plants. Functions were found for heat transfer during the advanced boiling of oxygen and nitrogen on single pipes, the boiling of oxygen on pipe clusters and inside a pipe, and the convection of oxygen and nitrogen on pipe clusters and single pipes. A formula was derived for determining the specific gravity of the vapor-liquid mixture during the boiling of oxygen on pipe clusters. A hysteresis was found in the region of transition from convection to boiling and vice versa.

Keyer, N. B. and Kutseva, L. M.
INVESTIGATION OF CHEMISORPTION OF GAS ON NICKEL OXIDE AND ITS SOLID SOLUTIONS WITH LITHIUM OXIDE. [1960] 12p. (7 figs. omitted) 21 refs. M1252.
Order from LC or SLA mi$2.40, ph$3.30 60-15779

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 5, p. 797-805.

The dissolution of Li_2O in NiO accelerated the adsorption of electron acceptor gases (O_2 and CO_2) and inhibited the adsorption of electron donor gases (CO anc C_2H_2). The adsorption of O_2 and CO_2 was accompanied by an increase in electrical conductivity, adsorption of CO and C_2H_2 by a decrease. Dissolution of Li_2O in NiO increased the initial activation energy of adsorption for donor gases and decreased it for acceptor gases. The changes in activation energy can not be explained by the variation in the level of the chemical potential. Isotope studies showed that the active surfaces of NiO and its solid solutions with Li_2O were heterogeneous. The hypothesis is proposed that the active centers of adsorption of electron acceptor gases are formed by electrons on the centers of acceptor additions. The active centers of adsorption of electron donor gases are formed by Ni^{3+} cations which are not associated with the addition.

Khenokh, M. A.
EFFECT OF ULTRASONICS UPON CARBOHYDRATES (Vozdeystviye Ultrazvuka na Uglevody). [1960] 7p. 13 refs. PL-480-PST Cat. no. 60.
Order from OTS $0.50 60-21125

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 97, no. 5, p. 871-874.

Continuation of previous experiments (Akad. Nauk SSSR. Doklady 68: 333, 1949 (available in translation from SLA as RT-3249); 80: 921, 1951, 94: 109, 1954 (available in translation from ATS as ATS-20L35R); and Zhur. Obshchei Khim. 23: 1464, 1953) showed that carbohydrates undergo a hydrolytic cleavage when subjected to oxidative decomposition by ultrasonic oscillations. Hydrolysis in the ultrasonic field leads to a splitting of the 1.2 bond of saccharose and the 1.6 bond of raffinose. (See also 60-21117)

Kieffer, R. and Kolbe, F.
THE BEHAVIOR DURING SCALING AND THE OXIDATION MECHANISM OF HARD ALLOYS WHICH ARE HEAT AND SCALE-RESISTANT, ESPECIALLY THOSE WITH A TITANIUM CARBIDE BASE. [1960] [27]p. (5 figs. omitted) 27 refs.
Order from SLA mi$2.70, ph$4.80 60-16765

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1950, v. 262 [no. 1/5] p. 229-247.

Kolmogorov, A. N.
THE BREAKING OF DROPS IN A TURBULENT CURRENT. [1960] 4p. 2 refs. NT740; M1407.
Order from LC or SLA mi$1.80, ph$1.80 60-17228

Trans. of Akad[emiya] Nauk SSSR. Dok[lady] 1949, v. 66, no. 5, p. 825-828.

Lapinskaya, Ye. M., Mironova, A. N., and Khenokh, M. A.
EFFECT OF ULTRASONIC WAVES UPON ALBUMIN AND AMINO ACIDS (Vozdeystviye Ul'trazvuka na Belki i Aminokisloty). [1960] 7p. 10 refs. PL-480-PST Cat. no. 59.
Order from OTS $0.50 60-21117

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 94, no. 1, p. 109-112.

Experiments showed that the oxidation processes taking place in the macromolecules of protein under the influence of the ultrasonic oscillations, cause a change in the cyclic amino-acid chain, as well as a de-amination and a rupture of the NH bond. (See also 60-21125)

Lorenz, W.
LATTICE INCORPORATION POLARIZATION. [1960] 7p.
Order from ATS $9.65 ATS-67M41G

Trans. of Z[eitschrift für] Elektrochem[ie] (West Germany) 1953, v. 57, no. 5, p. 382-385.

Mokhnatkin, M. P.
THE POLYMORPHIC TRANSFORMATIONS OF AMMONIUM NITRATE. [1960] 2p.
Order from ATS $4.40 ATS-28M41R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1954, v. 28, no. 3, p. 552-553.

Morozova, M. P., Li, Mao-shu, and Golomolzina, M. V.
HEATS OF FORMATION OF COMPOUNDS OF STRONTIUM WITH ELEMENTS OF THE PRINCIPAL SUBGROUP OF GROUP IV. [1960] 4p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-16684

Trans. of Leningrad U. [Vestnik] (USSR) 1959, v. 14, no. 10 [Seriya Fiziki i Khimiyi, no. 2] p. 83-86.

By determining the heats of reaction of Sr_2Si, Sr_2Ge, Sr_2Sn, and Sr_2Pb with hydrochloric acid, the following heats of formation were found: 91.0 ± 7; 74.9 ± 0.5; 82.7 ± 1 and 80.1 ± 1 kcal/gram mol, respectively. In going from silicon to lead, the values obtained do not change monotonously; they obey the rule of secondary periodicity. (Author)

Morozov, I. S., Korshunov, B. G. and others.
THERMAL AND TENSIMETRIC STUDY OF THE SYSTEM $NbCl_5$-$FeCl_3$-NaCl. [1960] 6p.
Order from ATS $8.00 ATS-27M42R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zaved[eniy]. Khim[iya] i Khim[icheskaya] Teknol[ogiya] (USSR) 1959, v. 2, no. 4, p. 485-489.

Neyman, M. B., Rubina, Kh. M., and Shnol, R. B.
THE FIELD OF PROPAGATION OF COLD FLAME IN MIXTURES OF ETHYL ETHER AND AIR. Pt. 19 of Investigation of the Conditions of Ignition of Gas Mixtures. [1960] 7p. 11 refs. M1014.
Order from LC or SLA mi$1.80, ph$1.80 60-13717

Trans. of [Zhurnal Fizicheskoy Khimii] (USSR) 1948, v. 22, no. 6, p. 641-646.

The influence was studied of the pressure, temperature, composition of the mixture, diameter of the tube, and direction of propagation of the flame on the size of the field of propagation of the cold flame in mixtures of ethyl ether and air. (See also 60-13718)

Neyman, M. B., Rubina, Kh. M., and Shnol, R. B.
THE FUNDAMENTAL RATE OF PROPAGATION OF COLD FLAME IN MIXTURES OF ETHYL ETHER AND AIR. Pt. 20 of Investigation of the Conditions of Ignition of Gas Mixtures. [1960] 8p. 16 refs. M1015.
Order from LC or SLA mi$1.80, ph$1.80 60-13718

Trans. of [Zhurnal Fizicheskoy Khimii] (USSR) 1948, v. 22, no. 6, p. 647-653.

Experiments were performed to determine the influence of the diameter of the tube, the pressure of the gas mixture (p), the temperature (T), and the admixtures of peroxide of ethyl (x) and of tetramethyl lead (ξ) on the fundamental rate of propagation (w) of cold flame in mixtures of ether and air. Results may be described by $w = k[Dp(1 + \beta x - h\xi/w^2 \exp(-E/RT)]^{1/2}$. Here k is the constant of the speed and D is the coefficient of diffusion. The data obtained show that the cold flame of ether is of a chain-thermal nature. (See also 60-13717)

Polyanskiy, N. G.
THE THERMAL STABILITY OF STRONGLY ACIDIC SULPHONATED CATIONITES. II. ON THE INFLUENCE OF THERMAL TREATMENT ON SOME PHYSICO-CHEMICAL PROPERTIES OF THE HYDROGEN FORM OF CATIONITES KU-1 AND KU-2 (Otermicheskoy ustoychivosti sul'nokislykh sul'fokationitov Soobshcheniye II. O Vliyanii Termicheskoy Obrabotki na Nekotoryye Fiziko-khimicheskiye Svoystva Vodorodnykh form Kationitov KU-1 i KU-2). [1960] [16]p. 22 refs. M858.
Order from LC or SLA mi$2.40, ph$3.30 60-13664

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedeniy. Khim[iya] i [Khimicheskaya] Tekhnol[ogiya] 1958, no. 2, p. 152-159.

Preliminary heat treatment of dry sulfonated phenol-formaldehyde resin, KU-1, decreased its hydration and relative swelling capacities and increased the specific gravity of the granular hydrated cationate. This indicated a compaction of the space lattice of the resin, which explained the observed retardation of ion exchange from H ions to K ions as a result of thermal treatment. KU-2, the sulfonated copolymer of styrene and divinyl-benzene resin, was more stable to structural changes than KU-1, and the relative dynamic exchange capacity was not changed by preliminary heat treatment. Physio-chemical changes began only at 185°C.

Rayzer, Yu. P.
THE FORMATION OF NITROGEN OXIDES IN THE SHOCK WAVE OF A STRONG EXPLOSION IN AIR. 30 June 60 [17]p. 11 refs. JPRS: 2956.
Order from OTS $0.50 60-11839

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1959, v. 33, no. 3, p. 700-709.

To explain a number of optical phenomena observed in a strong explosion (glow of the shock wave from 7000° to 2000°, the breaking away of the wave front from the ball of fire and the characteristic intensity minimum of the latter) the kinetics are examined of the formation of the nitrogen oxides NO and NO_2 and their distribution is calculated for air caught in a strong shock wave. An estimation is made of the total nitrogen oxidized during the strong explosion. Nitrogen oxide does not form in fronts with temperatures below 2000°. The basic mechanism in the formation of the dioxide at temperatures above 2000° was shown to be the process $NO+O_2=NO_2+O$ and the rate of this reaction was calculated with the aid of the activated complex method.

Reinkowski, D. and Knorr, C. A.
THE ELECTROLYTIC SEPARATION OF CHROMIUM FROM AQUEOUS CHROMIC ACID SOLUTIONS CONTAINING FOREIGN IONS. [1960] 14p.
Order from ATS $19.80 ATS-68M41G

Trans. of Z[eitschrift für] Elektrochemie (West Germany) 1954, v. 57, no. 9, p. 709-718.

Shatenshteya, A. I.
ON THE MECHANICS OF HYDROGEN EXCHANGE IN SOLUTIONS. 30 May 60, 11p. 38 refs. JPRS: 3332.
Order from OTS $0.50 60-31201

Trans. of Ukrainskiy Khimicheskiy Zhurnal (USSR) 1956, v. 22, no. 1, p. 3-10.

This survey is based on papers read at a conference held in Kiev on May 5 to 7, 1955.

Shchukarev, S. A., Vasil'kova, I. V., and Sharupin, B. N.
INVESTIGATION OF MOLYBDENUM HALIDES: SYNTHESIS AND DETERMINATION OF THE FORMATION ENTHALPY OF MOLYBDENUM TETRACHLORIDE. [1960] 8p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-16769

Trans. of Leningrad U. Vestnik (USSR) 1959, v. 14 [no. 10] Ser[iya] Fiz[iki] i Khim[iyi] no. 2, p. 72-77.

The formation enthalpy of molybdenum tetrachloride calculated on the basis of enthalpies measured for reactions of $MoCl_5$ and $MoCl_4$ with $FeCl_3$ solution containing HCl is 114 kcal/mole. The formation enthalpy of molybdenum pentachloride ΔH^0_{form} is 114.3 kcal/mole.

Shilov, A. Ye. and Sabirova, R. D.
MECHANISM OF THE PRIMARY ACT OF THERMAL DECOMPOSITION OF CHLOROMETHANES. II. DECOMPOSITION OF CHLOROFORM. [1960] 8p.
Order from ATS $10.50 ATS-64M42R

Trans. of *Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1960, v. 34, no. 4, p. 860-865.

Terenin, A. N.
PHOTOELECTRONICS OF ORGANIC COMPOUNDS. [1960] 16p. 61 refs.
Order from LC or SLA mi$2.40, ph$3.30 UCRL Trans-528

Trans. of Radiotekhnika i Elektronika (USSR) 1956, v. 1, p. 1127-1134.

A survey of the literature data on photoionization of organic dyes leads to a new viewpoint on the nature of photoconductivity of dyes.

Timofeyev, A. A.
THE DYNAMIC CHANGES IN THE VAPOUR DENSITY IN A HIGH-VOLTAGE MERCURY VALVE (Dinamicheskiye Izmeneniya Plotnosti Para v Rtutnom Ventile Vysokogo Napryazheniya). [1960] [29]p. 20 refs. M1626.
Order from LC or SLA mi$2.70, ph$4.80 60-19942

Trans. of Vsesoyuznyy Elektrotekhnicheskiy Institut. Trudy (USSR) 1958, v. 63, p. 192-217. Another translation is included in 60-19079, MCL-363/V, available from LC or SLA mi$11.10, ph$48.60, Feb 60 [317]p.

The impulse probe method (Zhur. Tekh. Fiz. 25: 1581, 1955) was used to investigate the change in mercury-vapor density over the current cycle in a high-voltage power tube. The curve for the mercury-vapor density showed a constant component with an alternating component superimposed on it during the conducting half cycle. The alternating component was positive (an increase in density) in the body and negative in the anode-grid unit. The increase in vapor density during the conducting half cycle is explained by the evaporation of fine mercury droplets in the tube body as a result of sputtering of mercury by the cathode spot. This evaporation occurs under the influence of heating as a result of recombination. The excess vapor occurring as a result condenses at the beginning of the reverse half cycle.

Tsvetkov, Yu. D., Lebedev, Ya. S., and Voyevodskiy, V. V.
STUDIES OF FREE RADICAL REACTIONS IN IRRADIATED POLYTETRAFLUOROETHYLENE. II. DETERMINATION OF THE RATE CONSTANT OF THE REACTIONS $RO_2 \rightleftarrows \dot{R} + O_2$ AND $\dot{R} + O_2 \rightleftarrows \dot{R}O_2$. [1960] 11p. 5 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-16526

Trans. of Vysokomolekulyarnyye Soyedineniya (USSR) 1959, v. 1, no. 11, p. 1634-1642.

The method of electron paramagnetic resonance was employed in a study of the equilibrium between the radicals $\dot{R} = (CF_2\text{-}\dot{C}F\text{-}CF_2)$ and $\dot{R}O_2 = (CF_2\text{-}CF(O\dot{O})\text{-}CF_2)$ in irradiated Teflon and of the kinetics of decomposition of the radical RO_2 at various temperatures. An analysis of the experimental data indicated that the equilibrium constant, K, of the reaction $RO_2 \rightleftarrows \dot{R} + O_2$ was $K \approx 10^{-23}\exp(-14000/RT)$; the rate constants of the forward (k_1) and reverse (k_2) reactions were $k_1 = 10^{8}\exp(-20000/RT)$ and $k_2 = 10^{-15}\exp(-60000/RT)$; and the solubility constant, k_p, of oxygen was $k_p = 10^{-3}\exp(6000/RT)$ for a cc of O_2/cc of specimen/mm of O_2 pressure. (See also 60-16511)

Tyutina, K. M. and Kudryavtsev, N. T.
ELECTROLYTIC DEPOSITION OF ALLOYS OF TIN-NICKEL FROM CHLORIDE-FLUORIDE SOLUTIONS, tr. by Leonard Shapiro. [1960] 6p. (1 fig. omitted) 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-17790

Trans. of [Akademiya Nauk SSSR. Doklady] 1957, v. 115, no. 3, p. 580-582.

Experiments showed that a tin-nickel alloy containing about 50% Sn can be obtained under the following conditions of electrolysis: an electrolyte composition of 2.5N $NiCl_2$ + approximately 0.5N $SnCl_2$ + approximately 1.6N NH_4F + paraphenol sulfonic acid 0.5M/l; a pH of approximately 4.5; an electrolyte temperature of 50 to 70°C; and a current density at the cathode of 0.5 to 4.0 amp/sq dm. The anodes of tin and nickel have a surface ratio of 1/20, and the average anode current density should be 0.5 to 1.0 amp/sq dm over the anode surface.

Vdovenko, V. M. and Smirnova, Ye. A.
CONCERNING THE PROBLEM OF DISTRIBUTION OF URANYL NITRATE BETWEEN AQUEOUS SOLUTIONS AND A NUMBER OF ETHERS AND ESTERS.
7 May 60, 13p. 9 refs. JPRS: 2615.
Order from OTS $0.50 60-11588

Trans. of Radiokhimiya (USSR) 1959, v. 1, no. 1, p. 43-51.

Experiments were performed to determine the distribution of $UO_2(NO_3)_2$ between water and a series of 21 ethers and esters. Equilibrium constants, activity coefficients, and the apparent molar volumes for $UO_2(NO_3)_2$ in these organic solvents were calculated and tabulated. It was shown graphically that the distributions are according to the equation

$$\log m\gamma a_w^{h/3} = 1/3 \log K_1 + 1/3 \log m_u,$$

where m and γ are respectively the molarity and activity coefficient of $UO_2(NO_3)_2$ in water, m_u is molarity in the organic phase, a_w and h are respectively the activity of water and the number of water molecules with which each $UO_2(NO_3)_2$ molecule enters the organic phase, and $K_1 = K/4$ when K is the equilibrium constant of the reaction $UO_2(NO_3)_2 \cdot hH_2O \rightleftarrows UO_2^{++} + 2NO_3 \, hH_2O$.

Volkensteyn, F. F.
CHEMICAL ADSORPTION ON IONIC CRYSTALS, tr. by Lydia Venters. Apr 60, 16p. (3 figs. omitted) 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-4043

Trans. of Zh[urnal] Fizicheskoy Khimii (USSR) 1952, v. 26, no. 10, p. 1463-1471.

A theoretical exposition of the mechanism of chemical adsorption of a monovalent atom on an ionic crystal composed of positive metal ions and negative metalloid ions showed that as the atom is advanced to the surface under certain conditions a local adherence level is produced for the free lattice electron. As the atom moves away from the surface this local level approaches the conduction zone. The fall of the lattice electron from the conduction zone to the local adherence level means the transition of the electron from a free to a bound state and the formation two-electron homopolar bond similar to that in the H_2 molecule. Hence the adsorption occurs on the free lattice electron which may be considered as an adsorption center in chemical adsorption.

Yeskin, V. Ye
INDICATRIX FOR THE LIGHT SCATTERING OF POLYMER SOLUTIONS AND VOLUME EFFECTS. [1960] 7p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-16649

Trans. of Vysokomolekulyarnyye Soyedineniya (USSR) 1959, v. 1 [no. 1] p. 138-142.

Measurement of the angular distribution of the light scattering by solutions of very high-molecular ($M = 20 \times 10^6$) polystyrene in toluene discloses a deviation of the scattering indicatrix from its Debye form. This deviation of the indicatrix agrees qualitatively with theoretical calculations that make allowance for the influence of volume effects upon the light scattering of polymer solutions. The discrepancy between the macromolecule dimensions in a good solvent as calculated from the Debye function and those given by the theory, allowing for volume effects, is as much as 20%. The theory of volume effects yields the best approximation to the true cluster sizes, yielding dimensions that agree with the intrinsic viscosity of the specimen. Employing the usual Debye function to calculate the size of polystyrene macromolecules with a molecular weight of 4.5×10^6 yields a fully satisfactory result, not only in the ideal solvent, but in a good solvent as well. (Author) (See also 59-14931)

EARTH SCIENCES

ACTA GEOPHYSICA POLONICA, 1959, [VOL. 7] SELECTED ABSTRACTS [Transactions in Geophysics of the Polish Academy of Sciences]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 1, abstracts 1-2, 6, 9-10, 60-17083-1
No. 3/4, abstracts 3, 9, 60-17083-3/4

Consists of selected abstracts in English.

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOFIZICHESKAYA, 1959, NO. 12, P. 1729-1903 (News of the Academy of Sciences of the USSR. Geophysics Series). [1960] 1v. SOV-49-59-12-(1-27)/27.
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Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

GEOPHYSICAL ACADEMIC AND RESEARCH INSTITUTES AND THE PERTINENT EQUIPMENT INDUSTRY OF THE HUNGARIAN PEOPLE'S REPUBLIC AND THIRD INTERNATIONAL SYMPOSIUM OF THE UNION OF HUNGARIAN GEOPHYSICISTS [Geophysikalische Lehr- und Forschungsinstitute und die Einschlägige Geräteindustrie der Volksrepublik Ungarn sowie 3. Internationales Symposium des Vereins Ungarischer Geophysiker]. 24 Nov 58, 8p. JPRS(NY)-L-482.
Order from OTS $0.50 59-11117

Trans. of Bergakademie (East Germany) 1958 [v. 10] no. 1, p. 40-42.

USSR OCEANOGRAPHIC RESEARCH. 22 Jan 60, 23p. 2 refs. JPRS: 2129-N.
Order from OTS $0.75 60-11174

Trans. of *Meteorologiya i Gidrologiya (USSR) 1959, no. 9, p. 41-45 and [Akademiya Nauk SSSR]. Okeanograficheskaya Komissiya]. Byulleten', 1958, no. 2, p. 57-60 and p. 65-74.

Contents:
Determination of the Elements of Surface Sea Currents by the Method of Radioactive Tracers, by N. V. Averbakh
Hydrooptical Apparatus and the Method of Marine Hydrophotometric Research, by V. M. Kozlyaninov
Use of Airplanes for Oceanographic Research in the Arctic, by A. F. Laktionov and V. A. Shamot'yev

Bokanenko, L. I.
DETERMINING THE FREQUENCY AND PHASE CHARACTERISTICS OF ELECTRODYNAMIC SEISMIC RECEPTORS WITH THE AID OF AUXILIARY EXCITATION COILS. (Opredeleniye Chastotnykh i Fazovykh Kharakteristik Elektrodinamicheskikh Seysmopriyemnikov pri Pomoshchi Dopolnitel'nykh Katushek Vozbuzhdeniya). Mar 60 [40]p. 9 refs. F-TS-9879/V.
Order from LC or SLA mi$3.00, ph$6.30 60-19131

Trans. of Akademiya Nauk [SSSR]. Izvestiya. Seriya Geofizicheskaya, 1956, no. 7, p. 776-793.

The principle and method of determining the frequency and phase characteristics of electrodynamic seismic receptors are described. The determination method is based on the use, in the seismic receptor, of an additional excitation coil which is mechanically rigidly connected with the movable system of the instrument. It is shown that during the excitation of the seismic re-

ceptor with the aid of the additional coil the determinable frequency and phase characteristics of the seismic receptor are practically independent from the conditions of its installation. (Author)

Broydo, A. G. and Suboch, N. A.
ON THE ACCURACY OF AN APPROXIMATE METHOD OF CALCULATING HEAT FLUX IN SOIL (O Tochnosti Priblizhennogo Methoda Rascheta Potoka Tepla v Pochve) tr. by George S. Mitchell. June 60 [8]p. 15 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-19869

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1958, no. 77[139] p. 99-103.

A literature review corroborated the deduction of N. P. Rusin (Glavnaya Geofiz. Observatoriya Trudy no. 52(114), 1955) concerning the possibility of calculating heat flux in soil on the basis of

$$B = \frac{c}{\tau} S_1$$

instead of $B = \frac{c}{\tau}\left[S_1 - \frac{a}{10} S_2\right]$ based on the method of G. Kh. Tseitin (Glavnaya Geofiz. Observatoriya Trudy no. 27(89), 1951; no39(101), 1953); and no. 60(122), 67-79, 1956 available in translation from LC or SLA mi$2.40, ph$3.30 as 60-15364). Here c is the mean specific heat of the upper 20-cm layer of the soil at constant volume; τ is the length of time between successive routine observation times, a is the mean coefficient of the thermometric conductivity of the soil layer, S_1 is a function associated with the change in the heat content of this layer during the interval of time under consideration, and S_2 is a function associated with the temperature change at certain depths during the same interval of time.

Nekrasov, N. N. and Shelest, V. A.
SOVIET-CHINESE SCIENTIFIC INVESTIGATIONS OF THE AMUR BASIN. 18 July 60, 14p. JPRS: 2994.
Order from $0.50 60-11899

Trans. of Akademiya Nauk SSSR. Sibirskoye Otdeleniye. Izvestiya, 1959, no. 10, p. 5-14.

The governments of the USSR and the Chinese People's Republic have concluded an agreement to carry out scientific-research and exploratory-planning work jointly in the Amur Basin, for the purpose of studying conditions and prospects for the development of the productive forces on the Soviet and Chinese territories of the Basin. (Author)

Sergeyev, M. A.
A SIMPLE FLOATING PENDULUM GYROCOMPASS WITH SUSPENSION ON A CORE BEARING. 30 June 60, 9p. JPRS: 2772.
Order from OTS $0.50 60-11723

Trans. from Izvestiya Vysshikh Uchebnykh Zavedeniy. Priborostroyeniye (USSR) 1959, no. 3.

A theoretical investigation is presented of the motion of the sensing component in this compass for an arbitrary position of the center of gravity relative to the center of volume. Results indicate that the period of free endamped motions for $P \approx Q$ is determined by

$$T = 2\pi\sqrt{\frac{H}{P(ly - Ly)U\cos\Phi}},$$

where P is the weight of the sensing component, Q is its carrying capacity, Φ is the latitude of the location, ly and Ly are the coordinates of the centers of gravity and volume respectively, and H has the units cm sec (sic).

Shekhter, F. N.
CALCULATING THE DEPTH OF FROST-PENETRATION IN SOIL AND THE TEMPERATURE OF THE FROST-PENETRATED SOIL (Raschet Glubiny Promerzaniya Pochvy i Temperatury Merzloy Pochvy) tr. by George S. Mitchell and Irene A. Donehoo. June 60 [21]p. 12 refs.
Order from LC or SLA mi$2.70, ph$4.80 60-23064

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1958, no. 77[139] p. 7-19.

Simpler equations are offered for a previous method (Glavnaya Geofizicheskaya Observatoriya, Trudy 53(115), 1955) for calculating frost penetration. With sharp temperature changes the calculated variation of frost penetration is smoother than the actual variation.

Climatology and Meteorology

Belotserkovskiy, V.
THREE DAYS IN THE FIGHT WITH CLOUDS. 20 Apr 60, 20p. JPRS: 2412.
Order from OTS $0.75 60-11554

Trans. of Moskva (USSR) 1958, no. 9, p. 160-170.

This "newspaper article" records the chit-chat between members of a rainmaking team during three days of work with an automatic cloud seeder using solid carbon dioxide. (See also 60-31092).

Chuvayev, A. P.
THERMAL BOUNDARIES OF THE INITIAL CRYSTALLIZATION OF CLOUDS. 25 July 60 [8]p. 8 refs. JPRS: 3592.
Order from OTS $0.50 60-31433

Trans. of Meteorologiya i Gidrologiya (USSR) 1960, no. 3, p. 26-28.

In the region of Lake Sevan (Armenian SSR) more than half of the recorded initial crystallization of Cu cong clouds fall within the temperature range -21 to -26°C. With a further decrease in temperature there apparently occurs a decrease in this frequency. However, it is absolutely not limited by the temperature limit -35°C. No crystallization of Cu cong clouds was noted at temperatures above -12°C. (See also 59-15555)

Dergach, A. L., Zabrodskiy, G. M., and Morachevskiy, V. G.
PROGRESS IN A COMPLEX INVESTIGATION OF St-Sc TYPE CLOUDS AND OF FOGS IN THE ARCTIC (Opyt Kompleksnogo Issledovaniya Oblakov Tipa St-Sc i Tumanov v Arktike) tr. by Irene A. Donehoo. June 60 [11]p. 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-19870

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1960, no. 1, p. 107-114.

The results of complex investigations of clouds and fogs in the Arctic Basin by means of aircraft meteorological instruments are presented. The characteristic of the variability of water content, of the droplet spectra, optical density of clouds and fogs in the vertical direction, from the base to the top of the layer, is given. The presence of small droplets in clouds and fogs which cannot be detected by aerosol collectors, is examined qualitatively. (Author)

Dubinskiy, G. P., Gural'nik, I. I., and Mamikonova, S. V.
METEOROLOGY, PT. I. Feb 60 [247]p. 4 refs. F-TS-9839/V.
Order from LC or SLA mi$11.10, ph$37.80 60-19127

Trans. of mono. Meteorologiya, Leningrad, 1956, chaps. 1-7.

The contents and the arrangement of the material in this volume and 60-19128 are largely based on meteorology curriculum for Soviet technical schools and the authors experience in teaching the course at the Kharkov Hydrometeorological Technical School. This first volume covers: Composition and structure of the atmosphere; Atmospheric pressure and air density; Solar, earth and atmospheric radiation; Temperature of the soil and water surfaces; Air temperature; and Water vapor in the atmosphere.

Karol', I. L.
THE EFFECT OF TURBULENT DIFFUSION IN THE DIRECTION OF THE WIND ON THE DISTRIBUTION OF THE CONCENTRATION OF A SUBSTANCE DIFFUSING IN THE ATMOSPHERE. [1960] 6p.
Order from ATS $10.00 ATS-07M42R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 131, no. 6, p. 1283-1286.
Another translation is available from OTS $0.50 as 60-11951, JPRS-5050, 15 July 60, 10p.

Kucherov, N. V. and Sternzat, M. S.
INSTRUMENTS FOR THE INVESTIGATION OF THE METEOROLOGICAL REGIME IN THE AIR LAYER NEXT TO THE GROUND (Pribory dlya Issledovaniya Meteorologicheskogo Rezhima v Prizemnom Sloye Atmosfery) tr. by Nina A. Stepanova. Jan 60 [10]p. 23 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-15363

Trans. of mono. Sovremennyye Problemy Meteorologii Prizemnogo Sloya Vozdukha. Sbornik Statey pod red. M. I. Budyko (Contemporary Problems in the Meteorology of the Surface Layer of the Atmosphere. A Symposium of Articles, ed. by M. I. Budyko) Leningrad, 1958, p. 187-191.

Laktyonov, A. F.
DRIFTING STATION NORTH POLE-2; DRIFTING STATIONS NORTH POLE-3, NORTH POLE-4 AND NORTH POLE-5: FOREIGN INVESTIGATIONS IN THE CENTRAL ARCTIC (Dreyfyushchaya Stantsiya "Severnyy Polyus-2"; Dreyfyushchiye Stantsii "Severnyy Polyus-3", "Severnyy Polyus-4" i "Severnyy Polyus-5"; Zarubezhnyye Issledovaniya Tsentral'noy Arktiki) tr. by John Miller. Oct 59 [36]p. T-R-229+.
Order from LC or SLA mi$3.00, ph$6.30 60-13240

Trans. of mono. Severnyy Polyus (The North Pole) Moscow, 1955, p. 306-346.

General descriptions are given of the scientific activities and discoveries.

Mertsalov, A. N.
THE QUESTION OF THE INTERCONNECTION BETWEEN WIND DIVERGENCE, CHANGE OF VORTICITY AND PRESSURE CHANGE (K Voprosu o Vzaimosvyazi Mezhdu Divergentsiyey Vetra, Izmeneniyem Vikhrya Skorosti i Izmeneniyem Davleniya) tr. by Richard M. Holden. Mar 60 [7]p. 4 refs. T-R-267+.
Order from LC or SLA mi$1.80, ph$1.80 60-17696

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 4, p. 16-20.

It is assumed that wind convergence is the cause of increasing pressure and that divergence causes a decrease, when averaged over an entire vertical column of air. If the change in circulation is examined locally however, the transfer of vorticity in the vertical direction plays the essential role. Analysis indicates that the vertical vorticity gradient is greatest in the upper part of the atmosphere.

Vysokovskiy, D. M.
SCATTERING AND ABSORPTION OF MICROWAVES IN ATMOSPHERIC FORMATIONS (RAIN, SNOW, CLOUDS, MIST) AND RADAR (Rasseyaniye i Pogloshcheniye Mikroradiovoln v Atmosfernykh Obrazovaniyakh (Dozhd', Sneg, Oblachnost', Tuman) i Radiolokatskiya). [1960] [57]p. 32 refs. F-TS-9319/V.
Order from LC or SLA mi$3.60, ph$9.30 60-23228

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1952, v. 47, no. 3, p. 398-444.

A survey of information obtained mainly from non-Soviet literature.

COORDINATORS OF ENGINEER S. A. TINYAKOV. Trans. on Soviet Geodesy 1925-40. 25 July 60, 5p. JPRS: R-108-N/9.
Order from OTS $0.50 60-41015

Trans. of Geodezist (USSR) 1930 [v. 6] no. 1, p. 65-68.

Two models of coordinators of a simplified system are described with which curved or broken lines can be easily plotted from their given abscissae and ordinates.

GEODESY AND CARTOGRAPHY, 1958, NO. 8 [P. 3-79]. Jan 60 [146]p. MCL-163/V.
Order from LC or SLA mi$7.20, ph$22.80 60-19039

Trans. of Geodeziya i Kartografiya (USSR) 1958, no. 8 [p. 3-79].

Contents:
The tasks of trade union organizations in institutions and enterprises of the State Cartographic-Geodetic Service, unsigned article
Precision phototachymetric polygonometry, by I. I. Entin and V. I. Sinyagina
Concerning the precision of determination of longitude for first-order control points, by M. N. Severov
Astronomical determinations on the continent of Antarctica in the course of the International Geophysical Year, by V. Kh. Galeyev
The construction of monuments for regions of propagation of perennial frost, by M. S. Uspenskiy
A study of mechanical phototriangulation, by S. M. Lebedev
Concerning the distortion of aerial negatives
Sensitometric quality control of aerial-film processing in the darkroom, by D. A Yanutsh
Concerning cartographic forestry documents and their use in topographic surveying, by D. P. Berezin
Concerning the consolidation of water-level marks for rivers with many dams and the representation of large reservoirs on topographic maps, by R. I. Vol'pe
Concerning the measurement of crooked lines on maps, by A. K. Malovichko
Certain problems of cost reduction in compiling, editing, and designing work, by A. V. Edelstein
Aerial camera objectives and methods of testing them abroad, by O. A. Gerasimov

WORKS OF THE INTERVUZ SCIENTIFIC CONFERENCE ON THE PROBLEMS OF CONSTRUCTING A GEODETIC CONTROL NET. 1 July 60 [90]p. 26 refs. JPRS: 3478.
Order from OTS $2.25 60-31320

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy. Geodeziya i Aerofotos"yemka (USSR) 1960, no. 1, p. 5-7, 9-15, 17-56 and 89-101.

Contents:
Resolution Passed at the Scientific Conference of Higher Educational Institutes on the Problems of Constructing a Geodetic Control Net, by K. Provorov
The Tasks of the Geodetic Service in Fulfilling the Seven-Year Plan for the Development of the National Economy of the USSR, by A. N. Baranov
Future Development of the Plans and Programs for the Construction of the State Geodetic Network of the USSR, by S. G. Sudakov
The Future Plan and Program for the Construction of the State Geodetic Network of the USSR, by A. I. Durnev
Modern Means and Methods for Geodetic Marriage of Continents, by A. V. Butkevich

Alekseyev, K.
A HORIZONTAL PLOTTING SCALE. Trans. on Soviet Geodesy 1925-40. 12 July 60, 3p. JPRS: R-109-N/36.
Order from OTS $0.50 60-11923

Trans. of Geodezist (USSR) 1931 [v. 7] no. 5, p. 42-43.

Bashlavin, L. and Chistyakov, N.
ACCURACY OF LEVEL TRAVERSES. Trans. on Soviet Geodesy 1925-40. 7 July 60, 2p. JPRS: R-106-N/13.
Order from OTS $0.50 60-11868

Trans. of Geodezist (USSR) 1928 [v. 4] no. 8, p. 30-31.

A levelling method proposed by A. A. Trushchov is inaccurate.

Belokon', P.
A SURVEY OF THE CITY OF LENINAKAN. Trans. on Soviet Geodesy, 1925-40. 12 July 60, 6p. JPRS: R-107-N/54.
Order from OTS $0.50 60-11909

Trans. of Geodezist (USSR) 1929 [v. 5] no. 10, p. 41-45.

Blokhin, N.
ACCIDENTAL AND SYSTEMATIC ERRORS IN THE METHOD BY EQUAL ALTITUDES (ZINGER). Trans. on Soviet Geodesy 1925-40. 14 July 60, 11p. JPRS: R-106-N/12.
Order from OTS $0.50 60-11937

Trans. of Geodezist (USSR) 1928 [v. 4] no. 8, p. 9-16.

Time observations were made by the method of equal altitudes to determine reasons for differences between the values of the mean error of a single determination calculated a priori and obtained experimentally.

Chebotarev, A.
EVALUATION OF THE ACCURACY OF THE TRIANGULATION CHAIN. Trans. on Soviet Geodesy 1925-40. 28 July 60, 21p. JPRS: R-106-N/7.
Order from OTS $0.50 60-41056

Trans. of Geodezist (USSR) 1928 [v. 4] no. 6, p. 1-13

Rigorous and approximate procedures are given.

Dubrovskiy, K.
REDUCTION OF BASE LENGTH TO THE HORIZONTAL PLANE. Trans. on Soviet Geodesy 1925-40. 12 July 60, 9p. JPRS: R-105-N/39.
Order from OTS $0.50 60-11910

Trans. of Geodezist (USSR) 1927 [v. 3] no. 12, p. 11-18.

The problem is reduced to a variation of Hansen's problem.

Gan'shin, V.
FURTHER COMMENTS ON POTENOT'S PROBLEM [Yeshche o Zadache Potenota]. Trans. on Soviet Geodesy 1925-40. 14 May 60, 3p. 1 ref. JPRS: R-109-N/23.
Order from OTS $0.50 60-11623

Trans. of Geodezist (USSR) 1931 [v. 7] no. 4, p. 37-38.

Some of the equations are rederived for solving Potenot's problem according to the method of M. Vasil'chenko (Geodezist 5: no. 12, 1929). (See also 60-11378)

Goryachev, N.
THE SELECTION OF PEVTSOV STAR PAIRS FOR VARIOUS GEOGRAPHIC LATITUDES. Trans. on Soviet Geodesy 1925-40. 12 July 60, 10p. 1 ref. JPRS-R-107-N/60.
Order from OTS $0.50 60-11908

Trans. of Geodezist (USSR) 1929 [v. 5] no. 11, p. 13-20.

Procedures are proposed for selecting Pevtsov star pairs for a belt lying between two given latitudes, and for all latitudes simultaneously.

Kheyfets, M. Ye.
PERSONAL ERROR OF THE OBSERVER IN PENDULUM MEASUREMENTS OF ACCELERATION OF GRAVITY (O Lichnoy Oshibke Nablyudatelya pri Mayatnikovykh Izmereniyakh Uskoreniya Sily Tyazhesti). Nov 59 [20]p. 1 ref. MCL-32/V.
Order from LC or SLA mi$2.40, ph$3.30 60-15507

Trans. of Sbornik Statey po Geodezii (USSR) 1955, v. 9, p. 20-41.

A study of observations by 15 observers revealed that the effect of personal errors cannot be overlooked. To eliminate the corresponding systematic errors it is necessary to introduce into the technique a compulsory sequence of observations such that the work of each observer on the reference point and the point being determined will be the same. Conversion to automatic recording of pendulum oscillations is a possible way to combat the effect of personal error.

Khrennikov, N.
OPTICAL DISTANCE MEASUREMENTS. Trans. on Soviet Geodesy 1925-40. 8 July 60, 13p. 3 refs. JPRS: R-106-N/11.
Order from OTS $0.50 60-11882

Trans. of Geodezist (USSR) 1928 [v. 4] no. 8, p. 1-8.

By turning the reticle of the theodolite of a Reichenbach range finder so that the hairs are vertical, and using a horizontal rod or a subtense base, distances can be measured with accuracies approaching those attained in tape measurements.

Kobzar', Vladimir.
POLYGON ADJUSTMENT IN TRIGONOMETRIC CHAINS [O Poligonal'nom Uravnivanii Trigonometricheskikh Ryadov]. Trans. of Soviet Geodesy 1925-40. 4 May 60, 26p. JPRS: R-107-N/9.
Order from OTS $0.75 60-11577

Trans. of Geodezist (USSR) 1929 [v. 5] no. 3, p. 4-20.

The method suggested requires approximately one half the time of the Hatt method. Tables included for a single example suggest some conclusions, but these are left for a later paper.

Krasovskiy, F.
THE DIRECT AND INVERSE PROBLEM IN ZOLDNER SPHERICAL COORDINATES. Trans. on Soviet Geodesy 1925-40. 20 July 60, 11p. JPRS: R-106-N/17.
Order from OTS $0.50 60-11978

Trans. of Geodezist (USSR) 1928 [v. 4] no. 10, p. 5-12.

Krasovskiy, F.
GEODETIC AND TOPOGRAPHIC WORK IN THE USSR. Trans. on Soviet Geodesy 1925-40. 7 July 60, 22p. JPRS: R-105-N/32.
Order from OTS $0.50 60-11876

Trans. of Geodezist (USSR) 1926 [v. 2] no. 11, p. 14-33.

Larionov, S.
PORTABLE METAL SIGNALS AND AUTOMATIC LANTERNS USED IN TRIANGULATION IN NORWAY Trans. on Soviet Geodesy 1925-40. 8 July 60, 5p. JPRS: R-108-N/60.
Order from OTS $0.50 60-11884

Trans. of Geodezist (USSR) 1930 [v. 6] no. 8/9, p. 43-47.

Maksimovich, A.
BASIC WORK BY THE CENTRAL FIELD DIVISION OF THE SUPREME GEODETIC ADMINISTRATION IN 1925 (CONCLUSION). Trans. on Soviet Geodesy 1925-40. 3 Aug 60, 6p. 4 refs. JPRS: R-103-N/4.
Order from OTS $0.50 60-41121

Trans. of Geodezist (USSR) 1925 [v. 1] no. 4/5, p. 48-52.

See also 60-11005.

Mikhaylov, A. A.
THE DETERMINATION OF THE AZIMUTH OF A TERRESTRIAL OBJECT WITH SIMPLE INSTRUMENTS. Trans. on Soviet Geodesy 1925-40. 28 July 60, 9p. 3 refs. JPRS: R-108-N/30.
Order from OTS $0.50 60-41055

Trans. of Geodezist (USSR) 1930 [v. 6] no. 4, p. 9-15.

Molodenskiy, M. M. and Shaposhnikov, V.
MEASURING TRIPOD. Trans. on Soviet Geodesy 1925-40. 25 July 60, 2p. JPRS: R-108-N/25.
Order from OTS $0.50 60-41018

Trans. of Geodezist (USSR) 1930 [v. 6] no. 2/3, p. 64-65.

The target on which the sighting plane is aimed should be marked so it can be seen all the time. A level rod two centimeters thick should be provided with a holder on one end and put on the target. The holder should be provided with a clamp in order that it can be fixed to the target. After installation of the last tripod, located in front of the transit, the rod is put on the target of the tripod by means of the holder and the clamp is fastened. The transit can then be moved to the next point.

Natanson, S.
MEASUREMENT OF LENGTH BY MEANS OF WIRE OR TAPE. Trans. on Soviet Geodesy 1925-40. 20 July 60, 7p. 3 refs. JPRS: R-109-N/46.
Order from OTS $0.50 60-11980

Trans. of Geodezist (USSR) 1931 [v. 7] no. 6, p. 52-56.

Pavlov, N.
ASTRONOMICAL ACTIVITIES IN 1925 IN THE NORTHERN PORTION OF THE IRKUTSKAYA GUBERNIYA. Trans. on Soviet Geodesy 1925-40. 11 July 60, 8p. JPRS: R-104-N/34.
Order from OTS $0.50 60-11891

Trans. of Geodezist (USSR) 1926 [v. 2] no. 23/24, p. 30-37.

Popov, V.
THE DEFINITION OF A POINT FROM THREE GIVEN POINTS THE POTENOT PROBLEM [Spovov Opredeleniya Tochki po Trem Dannym Zadacha Potenota]. Trans. on Soviet Geodesy 1925-40. 15 Mar 60, 4p. JPRS: R-107-N/43.
Order from OTS $0.50 60-11378

Trans. of Geodezist (USSR) 1929 [v. 5] no. 9, p. 3-5.

A numerical example of a solution to Potenot's problem is presented in which coordinates of a point are obtained from those of three given points. (See also 60-11623)

Popov, V.
MORE CONCERNING THE NOMOGRAPHIC METHOD AND THE METHOD OF LEAST SQUARES. Trans. on Soviet Geodesy 1925-40. 18 July 60, 13p. 9 refs. JPRS: R-106-N/18.
Order from OTS $0.50 60-11960

Trans. of Geodezist (USSR) 1928 [v. 4] no. 12, p. 27-38.

The nomograph method of V. Vysotskiy (Geodezist 3: no. 3, 7, 1927; and 4: no. 7, 25, 1928) is reviewed and his knowledge of the method of least squares is found deficient.

Portsanko, I.
ZEISS RANGEFINDER "INVERT". Trans. on Soviet Geodesy 1925.40. 11 July 60, 4p. JPRS: R-112-N/8.
Order from OTS $0.50 60-11889

Trans. of Geodezist (USSR) 1934 [v. 10] no. 1/2, p. 71-72.

A method is proposed for using the rangefinder "Invert" in topographic mapping.

Reyner, B.
A YEAR'S ACHIEVEMENTS IN THE TOPOGRAPHIC AND GEODETIC FIELD. Trans. on Soviet Geodesy 1925-40. 3 Aug 60, 6p. JPRS: R-104-N/1.
Order from OTS $0.50 60-41120

Trans. of Geodezist (USSR) 1926 [v. 2] no. 1/2, p. 3-6.

Photo-theodolite and aero-photogrammetric surveys were initiated with excellent results.

S. L.
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Order from OTS $0.50 60-41084

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Savin, D.
A SIMPLIFIED METHOD FOR DETERMINING THE AZIMUTH OF THE TERRESTRIAL OBJECT. Trans. on Soviet Geodesy 1925-40. 25 July 60, 9p. JPRS: R-109-N/50.
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Order from OTS $0.50 60-41019

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Order from OTS $0.50 60-41037

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ADJUSTMENT OF POLYGONS IN GEOMETRIC COORDINATES. Trans. on Soviet Geodesy 1925-40. 8 July 60, 12p. 7 refs. JPRS: R-106-N/1.
Order from OTS $0.50 60-11885

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The methods of Prondzinskiy, Walker, and Pomerantsez are compared.

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ZOLDNER'S RECTANGULAR COORDINATES. Trans on Soviet Geodesy 1925-40. 25 July 60, 6p. 2 refs. JPRS: R-107-N/34.
Order from OTS $0.50 60-41010

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Formulas of conversion from geographical coordinates to rectangular (Zoldner) coordinates are derived which do not require any special calculation of correction numbers.

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LEVELING OPERATIONS OF THE MILITARY TOPOGRAPHIC ADMINISTRATION IN THE FAR EAST IN 1928. Trans. on Soviet Geodesy 1925-40. 20 July 60, 5p. JPRS: R-107-N/28.
Order from OTS $0.50 60-11979

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The miseries involved in finishing the leveling operations on the Trans-Baikal and Ussuri railroad lines are described.

Geology

CERTAIN TYPES OF PNEUMATOLYTIC-HYDROTHERMAL BERYLLIUM DEPOSITS. 14 July 60, 59p. 56 refs. JPRS: 5010.
Order from OTS $1.50 60-11877

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Foreword
Pneumatolytic-hydrothermal Berryllium Deposits, by A. I. Ginzberg
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Beryl-bearing Zones in Granodiorites, N. P. Zabolotnaya and Mi. I. Novikova
Conclusions
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Order from AGI $5.00, $55.00/year

Trans. of Akademiya Nauk SSSR. Institut Geologicheskikh Nauk. Trudy, 1955, v. 155, Geologicheskaya Seriya no. 66, p. 3-15; Geologicheskiy Sbornik (USSR) 1957, no. 4, p. 187-195; Sovetskaya Geologiya (USSR) 1958, no. 4 (2 articles, pages not given) and 1958, no. 1, p. 145-149.

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Preliminary Data on the Geology of the Antarctic Coast between Longitudes 89° and 107°, by O. S. Vyalov.
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Inherited Trends in the Development of the Paleozoic Structures of the Sarysu-Teniz Uplift (Central Kazakhstan) by V. G. Tikhomirov.
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Notes on International Scientific Meetings.
Review Section.

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*Nonferrous Ore Deposits in Bulgaria, by F. Ekiert and E. Konstantynowicz
*On the Accuracy of Small-Scale maps, by A. I. Shabanova
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Review section
Notes on International Scientific Meetings

*Translations of these articles are also available separately elsewhere.

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Order from AGI $5.00, $55.00/year

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The Manganese Ores, by Paul Ramdohr.
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*A Translation of this article is also available separately elsewhere

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Contains articles by Ye. A. Alexandrov, L. I. Blokhina, V. I. Gerasimovskiy, G. G. Grushkin, G. I. Smirnov, V. A. Sokolov, V. K. Yeliseyeva and Wang Yun-sheng, and Review section and Author and subject index to Vol. 1, 1959.

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SOME DATA ON THE LATERAL ZONATION OF THE DENSITY IN CARBONATE ROCKS OF TATARY AND ITS SIGNIFICANCE IN PROSPECTING FOR STRUCTURES BY MEANS OF GRAVIMETRIC SURVEYS. [1960] 4p.
Order from ATS $8.55 ATS-03M42R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 128, no. 1, p. 136-139.

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AFFILIATES OF THE ACADEMY OF SCIENCES USSR: IN THE KAREL' AFFILIATE OF THE ACADEMY OF SCIENCES USSR [AND] IN THE KOLA AFFILIATE OF THE ACADEMY OF SCIENCES USSR. 10 June 60, 6p. 1 ref. JPRS: 2769.
Order from OTS $0.50 60-11720

Trans. of Akademiya Nauk SSSR. [Karel'skiy Filial, Petrozavodsk]. Izvestiya Karel'skogo i Kol'skogo Filialov, 1959, no. 4, p. 157-159.

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Order from ATS $14.40 ATS-01M42R

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Order from LC or SLA mi$1.80, ph$1.80 60-17447

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 116, no. 3, p. 474-476.

A survey.

Medvedev, V. S. and Aybulatov, N. A.
A STUDY OF SAND-SHORE DYNAMICS USING LUMINESCENT SAND GRAINS AND AN AERIAL TRAMWAY (Izucheniye Dinamiki Otmelogo Peschanogo Berega pri Pomoshchi Lyuminoforov i Podvesnoy Dorogi) tr. by Milton C. Blake. [1960] [24]p. (3 figs. omitted) 10 refs.
Order from LC or SLA mi$2.70, ph$4.80 60-15448

Trans. of Akad[emiya] Nauk SSSR. Institut Okeanologii. Trudy, 1958, v. 28, p. 37-55.

Experiments with stained grains confirm that the transportation of detritus is accomplished by surf activity inclined along the bottom, and by currents transporting sand grains in suspension; the importance of the latter is increased with an increase in the surf activity. The maximum velocity of transport of sand approached the velocity of the longshore current and in absolute magnitude exceeded 2,000 m/hr. It appears that these velocities are not limits, because the current velocity reached 4,000 m/hr. During weak surf conditions the zone of maximum transport of detritus is located between the breaker line and the littoral bar; with an increase in surf activity the zone of general transport of detritus widens until it encompasses all three bars and the zone of maximum transport advances still farther toward the sea. The maximum transport of detritus was observed along the crests of the offshore bars in accord with the opinion of R. Ya. Knaps that the zone of most active transport of sand is on the upper part of the seaward slope of bars. Detailed investigations confirmed the hypothesis of Ye. N. Yegorov (Akad. Nauk SSSR. Instit. Okeanolog. Trudy 5: 1951; and Doklady Akad. Nauk SSSR 80: no. 5, 1951) about the comparative stability of the shoreline and about the changes in profile of the submerged nearshore slope.

Miklukho-Maklay, K. V.
THE PHYLOGENY AND STRATIGRAPHIC SIGNIFICANCE OF PALEOZOIC LAGENIDAE [O Filogenii i Stratigraficheskom Znachenii Paleozoyskikh Lagenid]. [1960] 4p.
Order from ATS $9.25 ATS-81M42R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 122, no. 3, p. 481-484.

Pomichev, V. D.
RUGOSA CORALS AND STRATIGRAPHY OF MIDDLE AND UPPER CARBONIFEROUS AND PERMIAN DEPOSITS OF DONETS BASIN [EXCERPTS] tr. by G. Rabchevsky. 28 Jan 60 [53]p. (figs. omitted). 42 refs.
Order from LC or SLA mi$3.60, ph$9.30 60-17580

Trans. of excerpts from Vsesoyuznyy Geologicheskiy Institut. Trudy (USSR) 1953.

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Genus Dibunophylloides gen nov.
Genus Diphyphyllum Lonsdale, 1845. Subgenus Donophyllum sungen. nov.
Family Petalaxidae fam nov.
Genus Petalaxis Mn. Edw. et H., 1852.
Petalaxis Maccoyana Mn. Edw. et H.
Subgenus Cystolonsdaleia subgen. nov.
Phylogeny Scheme of Corals of Group Lithostrotion-Eolithostrotionella of the Upper Carboniferous and Lower Permian from the Western Slope of Ural.

Priyma, V. I.
CORRECTING REFELCTED-WAVE HODOGRAPHS (O Vvedenii Popravok v Godografy Otrazhennykh Voln). June 60 [7]p. RTS 1457.
Order from LC or SLA mi$1.80, ph$1.80 60-19892

Trans. of Razvedochnaya i Promyslovaya Geofizika. [Sbornik Statey] (USSR) 1957, v. 17, p. 12-19.

The factors are established that affect the accuracy of the deductions of horizon depths.

ENGINEERING

Badalov, R. A.
EVALUATION OF THE PERFORMANCE OF THREE-ROLLER BITS. [1960] 7p.
Order from ATS $8.60 ATS-94M41R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zaved[eniy]. Neft' i Gaz (USSR) 1959, v. 2, no. 10, p. 19-25.

Demchuck, A.
NEW EQUIPMENT FOR THE HYDRAULIC EXTRACTION OF COAL. [1960] [6]p. A. 1591/SEH; M 1423.
Order from LC or SLA mi$1.80, ph$1.80 60-17238

Trans. of Master Uglya (USSR) 1957 [v. 6] no. 12, p. 14-16.

Jaroslav, Urbanec.
METHODS OF INCREASING LABOR PRODUCTIVITY IN FLUORITE MINING. 3 Nov 58, 11p. (21 illus. omitted) JPRS(DC)-L-568.
Order from OTS $0.50 PB 141 295T

Trans. of Rudy (Czechoslovakia) 1957, v. 5, no. 1, p. 341-346.

The results obtained in 1956 by the ore-heap and the selective-extraction methods are compared with those obtained in 1955 (Rudy 4: no. 7, 1956). The improvements shown in 1956 are attributed to suggestions contributed by workers.

Aeronautical Engineering

CIVIL AVIATION: SELECTED ARTICLES. Jan 60 [36]p. F-TS-9846/III.
Order from LC or SLA mi$3.00, ph$6.30 60-19130

Trans. of Grazhdanskaya Aviatsiya (USSR) 1958 [v. 15] no. 8, p. 3-4, 14-21, 26-27 and 38-39.

Contents:
Faster work and high quality, by V. Banteyev
Powerplant, by R. Korol' and M. Dubovik
Mechanization of maintenance constitutes a vital problem, by L. Kheyfets
Gatwick airport, by G. Pol'skoy

DEUTSCHE FLUGTECHNIK (EAST GERMANY) 1959, SELECTED ABSTRACTS [German Aviation Technology]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 7, abstracts 2-3, 5, 7-9, 60-17078-7
No. 8, abstracts 1-4, 12, 60-17078-8

Consists of selected abstracts in English.

IN THE INTEREST OF COMBAT TRAINING (V Interesakh Boyevoy Ucheby). May 60 [5]p. (2 illus. omitted) MCL-221/III.
Order from LC or SLA mi$1.80, ph$1.80 60-19052

Trans. from Sovetskaya Aviatsiya (USSR) 1959, no. 107 [p. 1].

This article says that Military pilot first class Communist Captain Gustchina likes his assignment of dragging a target glider.

SKRZYDLATA POLSKA, 1960, [VOL. 16] SELECTED ABSTRACTS [Winged Poland]. [1960].
Order from LC or SLA mi$1.80, ph$1.80

No. 11, abstracts 3, 6, 31, 33, 60-17093-11
No. 13, abstracts 7, 12, 15, 29, 60-17093-13
No. 15, abstracts 10, 21, 60-17093-15
No. 16, abstracts 0-16, 60-17093-16
No. 17, abstracts 7-14, 60-17093-17

Consists of selected abstracts in English.

WOJSKOWY PRZEGLAD LOTNICZY (POLAND) 1959, VOL. 108, NO. 10. SELECTED ABSTRACT [Air Force Review]. [1960] [2]p. POL/44-59-10-8/20.
Order from LC or SLA mi$1.80, ph$1.80 60-17086-10

Consists of selected abstract in English.

Bodner, V. A. and Seleznev, V. P.
AN APPROACH TO THE THEORY OF ERRORS IN SPACE NAVIGATION. 20 July 60, 15p. 4 refs. JPRS: 3573.
Order from OTS $0.50 60-31416

Trans. of Akademiya Nauk SSSR. [Otdeleniye Tekhnicheskikh Nauk]. Izvestiya: Energetika i Avtomatika, 1960, no. 2, p. 73-82.

A generalization of possible methods for astronomical interplanetary navigation is given and an evaluation of errors in these methods is presented.

Drozdovich, V. N.
ON AN INERTIAL METHOD OF MEASURING VELOCITIES. 2 July 60, 13p. 2 refs. JPRS: 2912.
Order from OTS $0.50 60-11815

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy. Priborostroyeniye (USSR) 1959, no. 3, p. 29-39.

Systematic errors caused by the Coriolis and centripetal accelerations are investigated for the purpose of finding their values in measuring velocities during long time intervals. The part played by coulomb friction is explained and an estimate is made of static errors caused by the forces of coulomb friction. The introduction of integral correction satisfying the Schuler condition is shown to be insufficient to obtain an accurate measurement of velocity by the method of inertia during motion along a large circle. In order to compensate for systematic errors produced by Coriolis and centripetal accelerations, it is necessary to introduce into the system additional devices which take into account the parameters of the trajectory and the position of the object along same. Integral correction ensures absence of errors of velocity measurement, errors which increase without limit with the passage of time. (See also 59-14155)

Kalinin, S. V.
ON THE STABILITY OF MOTION OF A PILOTLESS AIRPLANE [Ob Ustoychivosti Dvizheniya Samoleta s Avtopilotom]. [1960] 8p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-17377

Trans. of [Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1958, no. 4, p. 114-117].

Methods previously proposed by Kalinin (Priklad. Mat. i Mekhan. 12: (5), 1948; 13: (3), 1949; and 21: (1), 1957) are applied for solving equations of motion of the form

$$\frac{d^2\phi}{dt^2} + M\frac{d\phi}{dt} + k\phi = -N\eta,$$

$$\frac{d\psi}{dt} = F(\psi),$$

$$\psi = \phi + \beta \qquad \frac{d\phi}{dt} - \frac{1}{a}\eta.$$

Here ϕ is the yawing angle of the plane, η the angle through which the rudder is turned, ψ the argument of the servomotor, and $F(\psi)$ the servomotor characteristics whose values determine the velocity of displacement of the control unit.

Vukolov, V.
FIFTEEN TO TWENTY TIMES FASTER THAN A TRAIN; THE IL-18 AIRCRAFT FLIES THE MOSCOW-ADLER-MOSCOW AIR ROUTE (V 15-20 Raz Bystreye Poezda). May 60 [5]p. MCL-217/III.
Order from LC or SLA mi$1.80, ph$1.80 60-19050

Trans. from Krasnaya Zvezda (USSR) [1959, no. 93] p. 1-2.

Yur'yev, B[oris] N[ikolayevich]
THE AERODYNAMIC DESIGN OF HELICOPTERS, PT. I, ed. by A. I. Sokolov. Apr 60 [310]p. F-TS-9747/V.
Order from LC or SLA mi$11.10, ph$47.10 60-19110

Trans. of mono. Aerodinamicheskiy Raschet Vertoletov, Moscow, 1956, chaps. 1-8.

The present textbook, for aviation colleges, is based essentially on the scientific methods of Professor

N. Ye. Zhukovskiy, although foreign experience is also incorporated. The book contains materials necessary for practical studies, laboratory experiments, course and thesis planning. The aim is to furnish the knowledge and materials necessary for arranging the components of the aerodynamic system of a helicopter and for carry carrying out the aerodynamic design. The eight chapters included in this first volume are: A short history of helicopter development and the scientific disciplines related to it; Basic terminology and symbols; Basic information on propellers for various purposes; Aerodynamic principles of helicopters; The law of similarity for propellers; The use of propeller similarity laws for practical calculations; An elementary theory of slipstream (momentum) and its applications (an ideal propeller); and The impulse theory of a rotor during axial motion (a general rotor theory). (See also 60-19111)

Yur'yev, B[oris] N[ikolayevich]
THE AERODYNAMIC DESIGN OF HELICOPTERS, PT. II [ed. by A. L. Sokolov]. [1960] [330]p. 145 refs. F-TS-9747/V.
Order from LC or SLA mi$1.10, ph$50.10 60-19111

Trans. of mono. [Aerodinamicheskiy Raschet Vertoletov, Moscow, 1956] chaps. 9-21.

Contents: Working formulae of the impulse theory; The vertical flight of a helicopter; The vertical descent performance of a helicopter with an operating engine and in autorotation (a supplement to chapters 7 and 10); The characteristic angles and velocities of a rotor in forward flight; The forces acting on a rotor and the power consumed by it; The aerodynamic design of a helicopter for all flight conditions; The flapping motion of rotor blades and the rotor thrust coefficient calculated in the first approximation for an oblique flow; The aerodynamic design and comparison of various helicopter systems; The flapping motion of rotor blades; A rotor with free-flapping blades; The operation of a rotor with cyclic and flapping controls; Special rotor forms; and Inertia loads of rotor blades. (See also 60-19110)

Chemical Engineering

CHEMISCHE TECHNIK (EAST GERMANY) 1959 [VOL. 11] NO. 7. SELECTED ABSTRACTS [Chemical Technology]. [1960] [8]p. GER/2-59-7-(1, 4-6, 12-14)/22.
Order from LC or SLA mi$1.80, ph$1.80 60-17076-7

Consists of selected abstracts in English.

PROCEDURE FOR DISTILLATION OF LIQUID ROSIN. [1960] 6p. (1 fig. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-14794

Trans. of Swedish patent 106,325, cl. 12:0:11, appl. 3 May 40, allowed 19 Nov 42, pub. 19 Jan 43, by Bergvik and Ala Nya Aktiebolag.

In the first distillation apparatus the most volatile substances, such as preoil and some fatty acids are continuously driven off. Remaining higher boiling products such as fatty acids, rosin acids and pitch are continuously taken over to a (second) distillation apparatus, where fatty acids or rosin acids are continuously driven off, after which the distillate is cooled and centrifuged for the separation of the rosin acids. Fatty acids and noncrystallized rosin acids in liquid form are mixed with preoil and fatty acids from the first distillation apparatus. The obtained oil is continuously led into a third column apparatus, where the preoils are separated from rosin and fatty acids, which later undergo distillation in an intermittently operating column apparatus.

Groeck, Mas.
PROCESS FOR ENRICHMENT OF WATER (INCLUDED FOR FOOD PURPOSES) WITH COMPOUNDS CONTAINING FLUORINE, tr. by K. Hochschwender. 29 Feb 60, 3p. 2 refs. No. 2-36-60.
Order from LC or SLA mi$1.80, ph$1.80 60-15712

Trans. of German patent 943,760, cl. 85b, gr. 1 01, international cl. C 02 b, G1167, IVc/85b, registration pub. 13 Dec 51, granted 9 May 56, issued 14 Feb 57 (patented as of 2 Mar 50).

Mazel, M. I. and Yermolenko, N. F.
A RELATION BETWEEN THE CHEMICAL COMPOSITION OF THE INITIAL RAW MATERIAL AND THE RESULTING PRODUCT, tr. by Bertha P. Klenova. 4 Aug 58, 5p. 5 refs. [No.] 3743.
Order from LC or SLA mi$1.80, ph$1.80 60-17718

Trans. of Akad[emiya] Navuk BSSR, [Minsk]. Doklady, 1957, v. 1, p. 57-60.

An equation of the general form

$$[100 - \sum mC'_x - \sum n(C'_y - KC''_y)] \div KC''_z = 100K$$

was determined for the production of superphosphate from the mixing of ground phosphate, sulfuric acid, and water. Here K is the coefficient of yield, C'_x is the concentration of the elements or atomic groups composing the raw material but not entering the product; C'_y is the concentration in the raw material of elements which pass in part into the product; C''_y is their concentration in the product; C''_z is the concentration of elements in the products only; and m, n, and p are numerical coefficients determined from the chemical reactions underlying the industrial process.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
DESALINATION OF WATER. [July 60] 4p. 78 refs. OTS Selective Bibliography SB-419.
Order from OTS $0.10 OTS SB-419

A bibliography of reports listed in the two OTS monthly abstract journals: U.S. Government Research Reports and Technical Translations.

Schwarts, G. L.
CERTAIN METALLIC MATERIALS FOR CHEMICAL MACHINE BUILDING. 28 May 60, 7p. JPRS: 2678.
Order from OTS $0.50 60-11652

Trans. of Khimicheskoye Mashinostroyeniye (USSR) [1959] no. 5, p. 39-42.

New steels Kh18N28M3D3, Kh23N23M3D3, Kh23N28M3D3T, Kh23N27M2T, the alloy Ni-Si-Cu, aluminum AV2, and titanium VT1 were examined as to their resistivity to corrosive media (and thus their suitability as construction materials for chemical machinery).

Tayts, A. Yu and Chel'tsov, V. M.
PRODUCTION OF METALLIC POTASSIUM BY THE VACUUM-THERMIC METHOD. 15 July 60 [10]p. 8 refs. JPRS: 3517.
Order from OTS $0.50 60-31386

Trans. of Khimicheskaya Promyshlennost' (USSR) 1959, no. 5, p. 404-408.

The introduction of the silicon-thermal process for the production of potassium on an industrial scale was found to be feasible.

Tseft, A. L. and Tatarinova, A. A.
METHODS OF SELECTIVE EXTRACTION OF IRON, COPPER AND SULPHUR FROM THE COPPER CONCENTRATES OF CENTRAL KAZAKHSTAN. [1960] [13]p. 1 ref. NT 705; M 860.
Order from LC or SLA mi$2.40, ph$3.30 60-13666

Trans. of A[kademiya] N[auk] Kaz[akhskoy] SSR [Alma-Ata]. Vest[nik] 1958 [v. 14] no. 8, p. 32ff.

Investigations were made of the kinetics of dissolution of pyrite and chalcopyrite in $Fe_2(So_4)_3$, $FeCl_3$, $CuSo_4$ and $CuCl_2$ solutions. The application of hydrometallurgical methods in treatment of copper sulfide concentrates (Kounradski and Dzhenzkazganski ores) increased the extraction of copper and the separation of Pb, Zn, S and Fe. Flow sheets for high pressure and atmospheric pressure leaching of CuS concentrates (with and without pyrite) were proposed.

Zaring, I. I.
THE OPERATION OF BLOWERS IN THE CHEMICAL WORKS OF KONSTANTINOVSK, tr. by Bertha P. Klenova. 18 Mar 59, 4p. 1 ref. [No.] 3793.
Order from LC or SLA mi$1.80, ph$1.80 60-17722

Trans. of [Zhurnal Fizicheskoy Khimii] (USSR) 1941 [v. 15] no. 2, p. 6-7.

A blower should be used for the aeration of superphosphate when storing it in piles. The blower decreases the temperature of the superphosphate and the amount of moisture present in it.

Civil Engineering

BETON I ZHELEZOBETON (USSR) 1959, NO. 12, P. 529-576 (Concrete and Reinforced Concrete). [1960] [20]p. SOV-97-59-12-(1-14)/14.
Order from OTS $0.50, $3.00/6 mo. PB 141 090T-20
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

SOVIET CONSTRUCTION AND BUILDING MATERIALS INDUSTRY: SELECTED TRANSLATIONS NO. 8. 26 Jan 60, 35p. JPRS: 2160-N.
Order from OTS $1.00 60-11208

Trans. of Steklo i Keramika (USSR) 1959 [v. 16] no. 10, p. 1-4; Stroitel'nyye Materialy (USSR) 1959 [v. 5] no. 9, p. 1-3 and no. 10, p. 1-3; Akademiya Stroitel'stva i Arkhitektury SSSR. Izvestiya, 1959, no. 2, p. 111-113; and Stroitel'naya Gazeta (USSR) 1959 [v. 23] 2 Oct, p. 2 and 16 Oct, p. 3.

Contents:
Swift Realization of the Decisions of the Plenum of the Central Committee CPSU in the Ceramics Industry
Methods of Mechanizing and Automating Asbestos-Cement Production
Develop the Building Materials Industry in the East at Accelerated Rates
Prospects for the Development of Asbestos-Cement Construction Elements, by S. S. Pen
Cement Clinker from Electric Furnaces, by A. Fefer
Forthcoming All-Union Builders Conference on Electric Power Construction, by I. Novikov

de Sa, Carlos Pires and Leite, Daltro Barbosa.
NATIONAL HIGHWAY PLAN AND ROUTES OF APPROACH TO THE FUTURE CAPITAL OF THE REPUBLIC [AND] NEW SOURCES OF HIGHWAY FUNDS (O Plano Rodoviario Nacional e as Vias de Accesso a Futura Capital da Republica. Novas Fontes de Recursos para Rodovias) tr. by M. G. and D. B. Leite. [1959] [28]p. 2 refs. H-2582.
Order from LC or SLA mi$2.70, ph$4.80 59-14581

Trans. of Rodovia (Brazil) 1958 [v. 20] no. 215, p. 17-20 and 25-29.

Electrical and Electronic Engineering

APPLICATIONS OF SEMICONDUCTORS IN INSTRUMENT DESIGN. Feb 60 [337]p. 118 refs. MCL-106/V.
Order from LC or SLA mi$11.10, ph$51.60 60-19026

Trans. of mono. Primeneniye Poluprovodnikov v Priborostroyenii, Moscow, 1958, 259p.

Contents: Semiconductors and their role in modern technology, by N. I. Chistyakov; Thermistors and their fields of applications, by I. T. Sheftel'; The choice of operating regimes for semiconductor thermistors, by N. P. Udalov; Certain types of semiconductor thermistors, by V. Ye. Turkulets; Indirectly heated thermistors, by F. M. Maksudov; Practical experience with thermistors of types ShT-1 and T-8, by N. S. Afanas'yeva; The application of semiconductors in computers for the construction of functional quadrupoles, by A. S. Rastopshin; Photoresistors and their basic parameters, by B. T. Kolomiyets PbO photoresistors, by M. S. Kosman and O. I. Kolesova; Metallurgical photoresistor photorelays, by E. Yu. Gutnikov; Applications of the Hall effect in semiconductors, by V. P. Zhuze; Experimental examination of detector-type current-measuring devices using point-contact and planar germanium diodes, by T. P. Zheleztsova; Some possibilities of temperature self-compensation in rectifier-voltmeters, by E. N. Dolbnev; Protective and automation relays using semiconductor rectifiers, by G. G. Gimoyan; Modulation of infrared rays by electric current in a germanium diode, by Yu. I. Ukhanov; Thermoelectric cooling and its uses in instrument design, by Ye. A. Kolenko; Variconds and their field of application, by T. N. Verbitskaya; An investigation of the operation of variconds, by Ye. K. Mikhaylova.

ARCHIWUM ELEKTROTECHNIKI (POLAND) SELECTED ABSTRACTS [Records of Electrical Engineering of the Polish Academy of Sciences]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

1958, vol. 7, no. 4, 60-17868-4
1959, vol. 8, no. 2, 60-17072-2

Consists of selected abstracts in English.

ELECTRIC TECHNOLOGY U. S. S. R., 1960, VOL. 3, P. 355-504. July 60, 1v.
Order from PP $14.00, $56.00/year

Trans. of Elektrichestvo (USSR) 1959, no. 7, p. 8-13, 19-21, 55-57, 81-83; no. 8, p. 30-35, 45-51, 65-69, 78-80; no. 9, p. 13-20, 30-35, 72-73 and p. 84-88. Abstracts are included of the papers which are not translated in full.

'ELEKTROSVYAZ' (USSR) 1959 [V. 13] NO. 10, P. 3-80 (Electrical Comminications). [1960] [22]p. SOV-106-59-10-(1-11)/11.
Order from OTS $0.60, $3.50/6 mo. PB 141 099T-19
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

ELEKTROTECHNIKA (HUNGARY) 1960 [VOL. 53] NO. 1, SELECTED ABSTRACTS [Electrical Engineering]. [1960] [3]p. HUN/7-60-1-(2-3)/13.
Order from LC or SLA mi$1.80, ph$1.80 60-17867-1

Consists of selected abstracts in English.

HOCHFREQUENZTECHNIK UND ELEKTROAKUSTIK (EAST GERMANY) SELECTED ABSTRACTS [High Frequency and Electroacoustics]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

1959, vol. 68, no. 4, abstracts 1-2, 6-7, 60-17062-4
1959, vol. 68, no. 5, abstracts 1, 5-6, 60-17062-5
1960, vol. 69, no. 1, abstracts 1-3, 6-7, 60-17857-1

Consists of selected abstracts in English.

INNOVATIONS IN COMMUNICATIONS TECHNOLOGY (Novinki Tekhniki Svyazi) tr. by E. C. B. P. [1960] 2p. H 4954 C.
Order from OTS $0.50 60-21735

Trans. of [Vestnik Svyazi] (USSR) 1958 [v. 18, no. 7, p. 2 of cover].

The development is announced of (1) a power measurer, the IMS-3, for superhigh frequencies (700 to 1000, 1600 to 2000, and 3400 to 4400 megacycles); (2) a vibrohammer, the VM-2, for driving ground electrodes; (3) a winch for raising illuminating lights and decorations in telecenter studios; and (4) a rural block crossbar, the ATS K-57, with a 10- to 40-line capacity.

NACHRICHTENTECHNIK (EAST GERMANY) 1959 [VOL. 9] SELECTED ABSTRACTS [Communication Techniques]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 2, abstracts 3-4, 60-17075-2
No. 7, 60-17075-7
No. 8, abstracts 5-8, 13-14, 16-17, 60-17075-8
No. 10, abstracts 2, 6, 60-17075-10
No. 11, abstracts 4-9, 15, 60-17075-11

Consists of selected abstracts in English.

NOVA TECHNIKA (CZECHOSLOVAKIA) 1959, NO. 11, SELECTED ABSTRACTS [New Techniques]. [1960] [7]p. CZ/4-59-11-(15-16, 18-19, 24, 49)/56.
Order from LC or SLA mi$1.80, ph$1.80 60-17063-11

Consists of selected abstracts in English.

RADIO ENGINEERING, 1959, VOL. 14, NO. 8. July 60, 126p.
Order from PP $30.00/year ($15.00/year to individuals)

Trans. of Radiotekhnika (USSR) 1958, v. 14, no. 8, p. 3-[79].

RADIO [MOSCOW] (USSR) 1960, NO. 1, SELECTED ABSTRACTS [Radio]. [1960] [6]p. SOV/107-60-1-(11, 14, 17, 30-34, 59)/59.
Order from LC or SLA mi$1.80, ph$1.80 60-17864-1

Consists of selected abstracts in English.

REFERATIVNYY ZHURNAL. ELEKTROTEKHNIKA (USSR) 1959, NO. 20, SELECTED ABSTRACTS [Journal of Abstracts. Electrical Engineering]. [1960] [11]p. SOV/112-59-20-(41759-53106).
Order from LC or SLA mi$2.40, ph$3.30 60-17038-20

Consists of selected abstracts in English.

RELAY FOR PROTECTION OF ELECTRIC NETWORKS, tr. by L. A. N. 10 June 60, 14p. (13 figs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 60-17988

Trans. of French patent 1,193,579, gr. 12, cl. 6, International cl. H 02 d, appl. 25 Mar 58, granted 27 Apr 59, pub. 3 Nov 59, by Charbonnages de France.

A low alternating voltage of frequency higher than the fifteenth harmonic of the frequency in the protected network is injected through a set of inductances-capacitances. The method can be used for both single- and three-phase networks.

SDELOVACI TECHNIKA (CZECHOSLOVAKIA) 1959, SELECTED ABSTRACTS [Communication Technology]. [1960]
Order from LC or SLA

No. 2, abstracts 9-13, 35, mi$1.80, ph$1.80, 60-17081-2
No. 4, abstracts 4-6, 11, 14, 27-28, mi$1.80, ph$1.80, 60-17081-4
No. 5, abstracts 5, 23, mi$1.80, ph$1.80, 60-17081-5
No. 7, abstracts 5, 24, mi$1.80, ph$1.80, 60-17081-7
No. 12, abstracts 3, 5-6, 9, 11, 15-16, 18, 27-29, 36, 38, mi$2.40, ph$3.30, 60-17081-12

Consists of selected abstracts in English.

SDELOVACI TECHNIKA (CZECHOSLOVAKIA) 1960, SELECTED ABSTRACTS [Communication Technology]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 3, abstracts 1-2, 8, 12, 27-28, 32-33, 50, 52, 60-17082-3
No. 4, abstracts 2, 4, 9, 13, 17, 60-17082-4

Consists of selected abstracts in English.

TELECOMMUNICATIONS, 1959 [VOL. 13] NO. 11, P. 1165-1308. July 60, 1v.
Order from PP $30.00/year ($15.00/year to individuals)

Trans. of Elektrosvyaz' (USSR) 1959 [v. 13] no. 11, p. 3-80.

Al'bitskaya, O. N., Liventseva, N. D. and others. THE INVESTIGATION OF THE RESISTANCE OF DIELECTRICS TO MOISTURE AND MOULDS UNDER HUMID TROPICAL CLIMATIC CONDITIONS (Issledovaniye Vlagostoykosti i Gribostoykost Dielektrikov v Usloviyakh Tropicheskogo Vlazhnogo Klimata). [1960] [26]p. 15 refs. M 1610.
Order from LC or SLA mi$2.70, ph$4.80 60-19958

Trans. of V[sesoyuznyy] E[lektrotekhnicheskiy] I[nstitut]. Trudy (USSR) 1958, v. 62, p. 217-239.

The following substances proved resistant to mould: (1) the majority of organo-silicon substances; (2) the majority of organic high polymers of the polyethylene series; (3) synthetic rubbers and materials based on them; and (4) epoxy resins E-37 and ED-6 and materials based on them. The following materials proved non-resistant to mould: (1) natural oils and materials containing these in their composition; (2) certain natural resins (shellac and colophony); (3) natural rubber and materials into whose composition it enters; (4) ukhta bitumen and materials based on it; and (5) glycerol, cellulose and its products, and materials which contain these in their composition. A high degree of moisture-resistance under tropical climatic conditions was shown by all polymers of the ethylene series lacking hydrophilic groups (without fillers), organo-silicon polymers, phenol formaldehyde, melamine urea-formaldehyde compressed powder materials with mineral filler, organo-silicon glass-textolites, organo-silicon lacquer-impregnated glass fabrics and others. A poor degree of moisture-resistance was shown by cellulose materials (papers, fabrics, lacquer-impregnated fabrics), fibrous materials impregnated with phenol-and cresol-form-formaldehyde resins, plastics with wood pulp cellulose and asbestos fillers, and enamels with hygroscopic pigments.

Andryanov, K. A., Gribanova, O. I. and others. HEAT-RESISTANT ELECTRICAL INSULATING LACQUERS ON THE BASIS OF ORGANO-SILICON COMPOUNDS (Teplostoykiye Elektroizolyatsionnyye Laki na Osnove Kremnii Organicheskikh Soyedinenii). [1960] [17]p. M 1602.
Order from LC or SLA mi$2.40, ph$3.30 60-19966

Trans. of V[sesoyuznyy] E[lektrotekhnicheskiy] I[nstitut]. Trudy (USSR) 1958, v. 62, p. 16-28.

Polymeric organo-silicon products, containing siloxane grouping of atoms Si - O - Si, form a new class of compounds, which withstand prolonged operating temperatures up to 180°C. Depending on the molar proportions of the starting products, resins are synthesized and on their basis lacquers are produced for various purposes (bonding, coating and impregnating). Tests were carried out on films of organo-silicon lacquers in parallel with films with an organic base (oil-modified bituminous and glyptal) and these showed the superiority of organo-silicon lacquers in heat-and water-resistance and in the considerably smaller dependence of their dielectric characteristics on temperature. (Author)

Andryanov, K. A. and Zabyrina, K. I.
ORGANO-SILICON AND ORGANIC POLYMERS AND DIELECTRICS BASED ON THEM (Kremniiorganicheskiye i Organicheskiye Polimery i Dielektriki na ikh Osnove). [1960] [15]p. 6 refs. M 1603.
Order from LC or SLA mi$2.40, ph$3.30 60-19965

Trans. of V[sesoyuznyy] E[lektrotekhnicheskiy] I[nstitut]. Trudy (USSR) 1958, v. 62, p. 29-42.

A survey.

Artem'yev, B. K., Golubkov, G. Ye., and Kravtseva, I. I.
METHODS OF TESTING THE ELASTICITY OF WINDING CONDUCTORS (Metody Ispytaniya Elastichnosti Obmotochnykh Provodov). [1960] [9]p. 4 refs. M1614.
Order from LC or SLA mi$1.80, ph$1.80 60-19954

Trans. of V[sesoyuznyy] E[lektrotekhnicheskiy] I[nstitut]. Trudy (USSR) 1958, v. 62, p. 288-295.

Bunimovich, V. I. and Morozov, V. A.
THE PROBABILITY OF DISTORTION DUE TO SIDE FLUX AND TO GAUSSIAN NOISE. [1960] 11p.
Order from ATS $15.65 ATS-47M41R

Trans. of *Radiotekh[nika] i Elektron[ika] (USSR) 1959, v. 4, no. 10, p. 1585-1593.

Chervonenkis, Yakov Mikhaylovich.
LONG-DISTANCE LOW-AND MEDIUM-POWER D-C TRANSMISSION, ed. by A. A. Obukh. Mar 60 [227]p. 74 refs. F-TS-9990/V.
Order from LC or SLA mi$9.90, ph$34.80 60-19151

Trans. of mono. Peredacha Nebol'shikh i Srednikh Moshchnostey Postoyannym Tokom na Dal'niye Rasstoyaniya, Moscow, 1957, 176p.

This book discusses basic problems in development of electric power supply of the cities of the USSR, the importance of increasing the economic radius of power transmission, the possibility of joining cities and agricultural regions to power systems and to large industrial power stations. It presents the theory, technical essentials, and economic principles of transmission of electric power by rectified high-voltage direct current. The book is intended for wide circles of engineers, electricians, and power workers employed in the field of power transmission and municipal power supply, and may also be used for students of electrical engineering institutes engaged in the study of electrical networks and systems. (Soviet publisher's announcement)

Job, F. and Toutan, M.
EXTENDING THE FREQUENCY BAND TRANSMITTED BY 2.6/9.5 mm COAXIAL PAIRS TO 12 MEGACYCLES. Mar 60, 29p. 4 refs.
Order from SLA mi$2.70, ph$4.80 60-16806

Trans. of Cables et Transmission (France) 1959 v. 13, no. 3, p. 145-156.

The plans adopted by the French P. T. T. Administration for increasing the transmission capacity of 2.6/9.5 mm coaxial pairs from 900 to 2700 channels are described. The adopted frequency distribution conforming with recommendations of the C. C. I. T. T., makes it possible for the operating departments to use the frequency band with maximum flexibility thanks to the use of a small number of direct transfer filters. The general principles are discussed briefly: double amplification channel and double power supply circuit for the repeaters; remote measurement of the aging of the electron tubes; automatic line control in two stages; possible equalization adjustment during operation. The structure and characteristics of remote-controlled repeater stations as well as the principles of constructing control and modulation equipment for tertiary groups and production of the necessary frequencies are described. The characteristics of electron tubes are appended. (Author)

Kalitvyanskiy, V. I.
BEHAVIOUR OF POLYMER DIELECTRICS ON HEATING (Povedeniye Polimernykh Dielektrikov pri Nagrevanii). [1960] [41]p. 37 refs. M 1605.
Order from LC or SLA mi$3.30, ph$7.80 60-19963

Trans. of V[sesoyuznyy] E[lektrotekhnicheskiy] I[nstitut]. Trudy (USSR) 1958, v. 62, p. 88-122.

A survey.

Kalitvyanskiy, V. I.
THE RELATION BETWEEN THE HEAT RESISTANCE OF DIELECTRICS AND THEIR CHEMICAL COMPOSITION AND STRUCTURE (Svyaz' Nagrevastoykosti Dielektrikov c Ikh Khimicheskim Sostavom i Strukturoy). [1960] [60]p. 50 refs. M 1604.
Order from LC or SLA mi$3.60, ph$9.30 60-19964

Trans. of V[sesoyuznyy] E[lektrotekhnicheskiy] I[nstitut]. Trudy (USSR) 1958, v. 62, p. 43-87.

Data are given showing the chemical composition, the molecular structure, and the heat resistance (i.e., the temperature at which, over a prolonged period, the basic characteristics are preserved which ensure that the electrical functions are satisfactorily carried out) of a basic group of dielectrics which are of importance in the construction of electrical equipment.

Kazantsev, Yu. N., Kaznacheyev, Yu. I., and Meriakri, V. V.
A STUDY OF HELIX WAVEGUIDES. [1960] 5p.
Order from ATS $12.65 ATS-99M41R

Trans. of *Radiotekh[nika] i Elektron[ika] (USSR) 1959, v. 4, no. 11, p. 1816-1820.

Kudintseva, G. A. and Tsarev, B. M.
EMISSION CHARACTERISTICS OF HEXABORIDES OF SOME RARE EARTH METALS. [1960] [3]p. 5 refs. M853.
Order from LC or SLA mi$1.80, ph$1.80 60-13660

Trans. of *Radiotekhnika i Elektronika (USSR) 1958 [v. 3] no. 3, p. 428-429.

Emission characteristics and radiation coefficients are tabulated for the hexaborides of Ba, Y, La, Ce, Pr, Nd, Gd, Dy, Ho, Er, Yb, and Lu. Because the thermoelectron emission of GdB_6 is considerably greater than that of LaB_6, it can be used in place of YB_6 as a material for effective cathodes.

Kuznetsov, A. V.
ON ONE PROPERTY OF FUNCTIONS BEING REALIZED BY NONPLANAR NONREPETITIVE CIRCUITS. 27 June 60, 15p. 10 refs. JPRS: 2899.
Order from OTS $0.50 60-11804

Trans. of [Akademiya Nauk SSSR]. Matematicheskiy Institut. Trudy, 1958, v. 51, p. 174-185.

Theoretical considerations showed that no analog of the duality principle exists which is applicable to nonplanar networks. It is shown that in any nonplanar graph it is possible to arrange the contacts and the terminals in such a way that a functional which is dual to that realized by the resultant network cannot be realized by a network with fewer contacts.

Lopukhin, V. M., Charkin, B. D., and Zeveke, N. G.
EXPERIMENTAL DETECTION OF PARAMETRIC AMPLIFICATION IN A BACKWARD-WAVE TRAVELING-WAVE TUBE. [1960] 4p.
Order from ATS $7.85 ATS-00M42R

Trans. of *Radiotekh[nika] i Elektron[ika] (USSR) 1959, v. 4, no. 10, p. 1747-1749.

Mantrova, V. M.
THE PRODUCTION OF HIGHLY ELASTIC LACQUER-IMPREGNATED GLASS FABRICS FOR THE INSULATION OF ELECTRICAL MACHINES (Polucheniye Uprugo-Elastichnoy Steklolakotkani dlya Izolyatsii Elektricheskikh Mashin). [1960] [57]p. 27 refs. M 1606.
Order from LC or SLA mi$3.60, ph$9.30 60-19962

Trans. of V[sesoyuznyy] E[lektrotekhnicheskiy] I[nstitut]. Trudy (USSR) 1958, v. 62, p. 123-171.

Conditions of the heterofunctional condensation of dimethyldiethoxysilane with dimethyldichlorosilane and methyltrichlorosilane in the presence of ferric chloride as catalyst were studied. It was established that with the condensation of these monomers polymethyldimethylsiloxane is formed. A hypothesis is advanced regarding the mechanism of the condensation reaction. The compatibility was studied of polydimethylsiloxane rubber and polymethyldimethylsiloxane resin. With blending, polymers take the form of a physical mixture. Polydimethylsiloxane rubber of mark SKT and the polyorganosiloxane compound K-43 can be used as the basis of impregnating resins for glass fabric. A process was evolved for producing a new electrical insulation material (lacquer-impregnated rubber glass fabric) on the basis of glass fabric and heat-resistant binding agents: SKT rubber and K-43 compound. Lacquer-impregnated rubber glass fabric is distinguished by good dielectric properties and a high degree of elasticity and flexibility which is preserved over prolonged ageing with high temperatures. The production of lacquer-impregnated rubber glass fabric has been organized at the "Elektroizolit" factory where the relative production techniques and technical data have been handed over. During the process of developing production under industrial conditions, some 1500 m of lacquer-impregnated glass fabric were turned out which satisfied technical requirements for this material. The possibility was established of using lacquer-impregnated rubber glass fabric as insulation for electrical machines in place of mica tape.

Mayer, H. F. and Nottebrock, H.
ECHO SUPPRESSORS FOR FOUR-WIRE CONNECTIONS. [1960] 9p. (8 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-16488

Trans. of Siemens-Halske pamphlet, n.d.

Nadenenko, S. I.
METHODS OF INCREASING THE EFFICIENCY OF SIMPLE BAND SHORT-WAVE AERIALS [Puti Povysheniya Effektivnosti Prostykh Diapozonnykh Korotkovolnovykh Antenn]. [1960] [5]p. 6 refs. M 1287.
Order from LC or SLA mi$1.80, ph$1.80 60-15802

Trans. of *Radiotekhnika (USSR) 1958, v. 13, no. 11, p. 5-10.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 60-13843, DSIR LLU M. 970, [1960] 5p.

A short-wave band aerial, consisting of a horizontal band vibrator in a corner reflector (the corner is formed by the surface of the earth and a network of conductors arranged in a plane inclined with respect to the surface of the earth) is shown to be equivalent in efficiency to a single-wire rhombic aerial RG 65/4 I, though more economical, and occupying an aerial site of smaller area.

Nakayama, Y., Miyashiro, S., and Odagawa, K.
TOSHIBA IMAGE ORTHICON 5820. [1960] 19p.
Order from ATS $29.95 ATS-97M41J

Trans. of Toshiba Review (Japan) 1959, v. 14, no. 12, p. 1238-1245.

Sanin, A. A. and Dmitriyeva, N. N.
AN APPARATUS FOR MEASURING THE PARAMETERS OF PHOTOMULTIPLIERS (Pribor dlya Izmereniya Parametrov Folomnozhiteley). Dec 58 [4]p. 5 refs. C.T.S. no. 599.
Order from LC or SLA mi$1.80, ph$1.80 60-23082

Trans. of Pribory i Tekhnika Eksperimenta (USSR) 1957, no. 2, p. 103-105.

An apparatus for rapidly determining the resolving power and sensitivity at different points on the cathode is described. A cathode-ray tube is used as pulsed light source; the apparatus can be used for checking photomultipliers during production.

Shmakov, P.
15,000,000 TELEVISION SETS. 10 June 60, 3p. USASIA: SC-250b/60; JPRS R-759-D.
Order from OTS $0.50 60-31260

Trans. from Literatura i Zhizn' (USSR) 1959, no. 2.

Television prospects in light of the 7-year plan are discussed. Reference is made to a TV microscope developed in the USSR for geological surveying, and for oil well prospecting.

Sverdlov, Yu. L.
NEW CIRCUIT FOR A STAGE OF A MULTI-STAGE FREQUENCY MULTIPLIER (Novaya Skhema Kaskada Mnogokaskadnogo Umnozhitelya Chastoty) tr. by Franklin. Aug 59 [2]p. 1 ref. M 1384.
Order from LC or SLA mi$1.80, ph$1.80 60-17211

Trans. of *Radiotekhnika i Elektronika (USSR) 1958, v. 3, no. 7 [p. 954].

The new design differs from these used at present in that a resonant system described by a differential equation of the third order, is applied as the load of the tube, working under class C conditions.

Trofimov, K.
RELIABILITY OF RADIO-ELECTRONIC EQUIPMENT. [1960] [7]p. M 910.
Order from LC or SLA mi$1.80, ph$1.80 60-13784

Trans. of Radio [Moscow] (USSR) 1959, no. 1, p. 18-20. and 30.

Information is presented on (1) the criterion of reliability, (2) ways of increasing the reliability in the designing and manufacture of apparatus, and (3) the relation between reliability of operation of radio apparatus and the operating conditions.

Mechanical Engineering

PRZEGLAD MECHANICZNY (POLAND) 1959, SELECTED ABSTRACTS [Mechanical Review]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 15, 60-17069-15
No. 18, 60-17079-18

Consists of selected abstracts in English.

TEPLOENERGETIKA (USSR) 1960 [V. 7] (Heat Power Engineering). [1960]
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 1, p. 3-96, abstracts 1-22, PB 141 089T-22
No. 2, p. 3-96, abstracts 1-24, PB 141 089T-23

Consists of abstracts in English.

Chakrygin, V. G. and Lokshin, V. A.
TEMPERATURE CONDITIONS OF WORK IN HORIZONTAL STEAM GENERATING PIPES OPERATING AT EXTRA HIGH PRESSURES (Temperaturnyy Rezhim Raboty Gorizontalnikh Paroobrazuyushchykh Trub pri Sverkhvysokikh Davleniyakh). Oct 58, 7p. 5 refs. C. T. S. No. 509.
Order from LC or SLA mi$1.80, ph$1.80 60-17143

Trans. of Teploenergetika (USSR) 1957, v. 4, no. 9, p. 58-63.

More than 130 experiments covering a 45°C range from underheating to boiling were made with pressures of 180 to 220 atm and heat flow up to 4×10^5 Kcal/sq m/hr. Continuous measurements were made of the specific heat of the flow, pressure, and total mass of the liquid. With excessive pressure, differences in temperature through the perimeter due to stratification of the flow take place both with the movement of the boiling liquid and the water below the boiling point. Temperature differences exist through the perimeter of the pipe at the start of boiling, and abrupt variations can occur with small changes in the hydrodynamic and heat cycles of work in the pipe. Under excessive pressure a transition to film forming by the boiling liquid can occur.

Ditrih, H.
PNEUMATIC STOKING OF FURNACES WITH WOOD WASTE (Vpihavanje Lesnih Odpadkov v Kurisca). [1960] [6]p. (1 illus. omitted). Trans. no. 4554.
Order from SLA mi$1.80, ph$1.80 60-16514

Trans. of Les (Yugoslavia) 1957, v. 9, no. 4, p. 50-53.

The stoking conditions that cause black, sooty smoke are reviewed and a pneumatic stoking device is described which will alleviate them. The apparatus is relatively easy to adjust and is independent of the "experience, attentiveness, and good will of the stoker"

Ordnance, Missiles, and Satellite Vehicles

THE FIRST FLIGHT TO THE MOON. 1 June 60, 12p. (3 figs. omitted). USASIA: SC-119/60; JPRS: R-746-D.
Order from OTS $0.50 60-31250

Trans. of Priroda (USSR) 1959 [v. 48] no. 10, p. 1-7. Another translation is available from OTS $0.50, as 60-11536, JPRS-2553, 25 Apr 60, 15p.

General information is presented concerning the Soviet moon shot, launched on September 12, 1959. The container and final stage were thoroughly sterilized to insure that terrestrial microorganisms would not be carried to the moon. The data obtained indicate that no magnetic field or radiation belt of charged particles exist, although the currents produced by particles of ionized gas increased at about 10,000 km from the moon.

Kurnosova, L. V., ed.
ARTIFICIAL EARTH SATELLITES, VOL. 1 & 2. [1960] 236p.
Order from PLP 2 vols/$9.50

Trans. of Russian symposium Iskusstvennyye Sputniki Zemli.

Vasil'yev, G.
CABIN OF SPACE ROCKET (Kabina Kosmicheskoy Rakety). Mar 60 [9]p. MCL-405/V.
Order from LC or SLA mi$1.80, ph$1.80 60-19081

Trans. of Sovetskaya Aviatsiya (USSR) 1959 [no. 215] p. 4.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-22210, AF-1 256 225, 22 Oct 59 [5]p.

Comparisons of the work conditions of deep-sea divers and of pilots in a chamber filled with water show that the ideas of Konstantin Eduardovich Tsiolkovskiy for an anti-g chamber based on the buoyancy principle of Archimedes are well founded. Such a chamber will apparently be a rigid, hermetically sealed cabin built of a durable thin and transparent material. All controls will be inside of it, with hermetically sealed outlets leading outside. Astronauts will fill the chamber with liquid when they expect a greater g-force, during takeoff, braking, landing, and sharp changes in flight direction. Quick removal of water can be accomplished with compressed air.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Aratyunov, A. V.
TRANSCAUCASIAN INTER-REPUBLIC SCIENTIFIC-PRACTICAL CONFERENCE ON PROBLEMS OF NUTRITIONAL HYGIENE. 11 July 60 [13]p. JPRS: 5015.
Order from OTS $0.50 60-11905

Trans. of Voprosy Pitaniya (USSR) 1960, v. 19, no. 2, p. 92-95.

Brunelet, L., Sarrazin, P., and Vidal, Pierre.
TESTS ON MEAT PRESERVATION THROUGH THE COMBINED ACTION OF AUREOMYCIN HYDROCHLORIDE AND GAMMA IRRADIATION (Essais de Conservation des Viandes par l'Action Conjuguée du Chlorhydrate d'Auréomycine et de l'Irradiation Gamma). [1959] 13p. 16 refs.
Order from OTS $0.50 AEC-tr-3688

Trans. from la Revue de la Conserve (France) 1958, Dec.

Gorodetskiy, S.
TECHNICAL FOUNDATION FOR THE MEAT INDUSTRY (Tekhnicheskaya Baza Myasnoy Promyshlennosti) tr. by E. C. B. P. [1960] [6]p. H 5541 B.
Order from LC or SLA mi$1.80, ph$1.80 60-19580

Trans. of Myasnaya Industriya SSSR, 1959 [v. 30] no. 5, p. 42-43.

Information is given for judging the technical equipment of the meat industry at the beginning of the 1959-1965 seven year plan.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
FOOD PRESERVATION (EXCEPT BY IRRADIATION) (1950-1960). May 60, 10p. 125 refs. OTS Selective Bibliography SB-412.
Order from OTS $0.10 OTS SB-412

A bibliography of reports listed in the two OTS monthly abstract journals: U. S. Government Research Reports and Technical Translations. Reports are listed in categories as follows: dehydration, freezing, and food preservation, general.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

INCLINED DISK CONTROL MECHANISM, tr. by J. M. H. 24 May 60, 14p. (5 figs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 60-17605

Trans. of French patent 883,348, gr. 5, cl. 3, appl. 17 June 42, granted 22 Mar 43, pub. 1 July 43, by W. Schlafhorst & Co., Germany.

The invention is characterized in that it provides an improved arrangement of bearings. In addition to the longitudinal bearings of the inclined disk, the transverse bearings of the disk and the bearings or bearing surfaces of the connecting rods and of the oscillating support are provided with equalizing or relieving surfaces. These surfaces are connected directly (without special tubing) with the cylinder chambers.

USSR INDUSTRIAL EQUIPMENT (TRANSPORTATION, CONSTRUCTION, PRODUCTION AND POWER MACHINERY) [NO. 24, 24 JULY 60]. [1960] [19]p. 58 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-17671

Trans. of unevaluated information selected from Russian-language periodicals.

Pakhomov, A. V.
TOOL LIFE LENGTHENED BY HIGH-PRESSURE SPRAYING OF CUTTING FLUID. June 60, 750 words.
Order from HB $2.75 HB-4556

Trans. of Vestnik Mashinostroyeniya (USSR) 1958, v. 38, no. 2, p. 55-56.

IMPROVED ROTARY DEVICES SUITABLE AS MULTIPLEX CIRCULATION PUMPS OR AS MOTORS, tr. by J. M. H. 13 July 60, 5p. (figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-23087

Trans. of French patent 900,188, gr. 5, cl. 1, appl. 29 Nov 43, granted 18 Sep 44, pub. 21 June 45 (pat. appl. in Germany 23 Oct 42, per statement of applicant) by Graetz Aktiengesellschaft, Germany.

Chechel', N. S.
THE EFFECT OF THE NUMBER OF RUNNER BLADES ON THE POWER OUTPUT OF HIGH SPEED VARIABLE PITCH BLADE TURBINES. May 60 [16]p. 5 refs. RTS 1327.
Order from LC or SLA mi$2.40, ph$3.30 60-17921

Trans. of Politekh[nicheskiy] Inst[itut] Leningrad. Trudy (USSR) 1958, no. 193, p. 38-50.

Tests on a low head test stand showed that one effective method of increasing the efficiency of high speed hydraulic turbines is to increase the reduction coefficient of the draft tube by using a straight axis draft tube. At low and medium speeds most of the losses are nonprofile losses (vortex losses at the blade tips, losses due to flow across the radial gap between the blades and the throat ring, losses due to friction between the blades and the fluid, and such losses as those from the hub region to the peripheral region under the effect of centrifugal force). At higher speeds profile and nonprofile losses are about equal. The nonprofile losses can be reduced by reducing the pressure difference between the front and rear surfaces of the blades. This can be done by increasing the number of blades up to an optimum figure.

Chernov, A. D. and Pakhk, Ye. Ye.
EFFECT OF INLET STEAM PARAMETERS ON THE EFFICIENCY OF MAIN MARINE GEARED TURBINE INSTALLATIONS. Mar 60, 7p. 7 refs. Bureau of Ships Trans. no. 701.
Order from OTS $0.50 60-21724

Trans. of Sudostroyeniye (USSR) 1958 [v. 24] no. 9, p. 25-28.

Data, drawn from Soviet references, show the effective efficiency of the main geared turbine unit as a function of power, the mechanical losses in marine main geared turbine units as a function of power at the propeller shaft, the effective efficiency of marine turbine installations as a function of shaft power with the nozzle inlet steam pressure and temperature as parameters, and the internal efficiency of stationary turbines as a function of the steam parameters and steam rate and as a function of the steam pressure and temperature.

Chistyakov, A. M.
AN INVESTIGATION INTO STUDY OF THE PROBLEM OF SCALE EFFECT AND ITS INFLUENCE ON THE CONSTANTS OF HYDRAULIC TURBINES (K Voprosu Isucheniya Problemy Masshtabnogo Effekta i yego Vliyaniya Na Parametry Hidroturbiny) tr. by S. Bregosl. May 58 [44]p. 11 refs. MI391.
Order from LC or SLA mi$3.30, ph$7.80 60-17216

Trans. of Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Gidrotekhniki. Izvestiya (USSR) 1954, v. 52, p. 203-222.

Tests on a number of models of radial-axial turbines and feathering-vane turbines confirmed the superiority of the new method (Vsesoyuz. Nauch.-Issledovatel. Inst. Gidrotekh. Izvest. 48: 173-195, 1952; and 50: 167-179, 1953) for testing mechanical and hydraulic efficiency of turbine models and hydro-turbine plants. The correction required to compensate for the scale factor of the models is considerably reduced with the new method and the reduced speeds $n_1'^*$ and reduced discharges $Q_1'^*$ determined from the new main general characteristics $\varepsilon = f(n_1'^*, Q_1'^*)$ are considerably higher than those determined from the characteristics $\eta = f(n_1', Q_1')$ according to the old method (Arrangement of turbines in hydro-electric stations, in Russian, edited by A. A. Morozov, Gosenergoizdat, 1949).

Kaeppeler, H. J.
ON THE QUESTION OF THE APPLICABILITY OF THERMONUCLEAR REACTIONS IN ROCKETS. PT. I. (Zur Frage der Verwendbarkeit Thermonuklearer Reaktionen in Raketen. Teil 1) tr. by Hutcheson. [1959] [25]p. (4 figs. omitted) 102 refs. H-2027.
Order from OTS $0.75 59-11893

Trans. of Raketentechnik und Raumfahrtforschung (West Germany) 1957, no. 3, p. 60-70.

Different proposals are analyzed for gaining energy from the fusion of light nuclei for specific application in rocket engines. The cases of neutron-induced, noncatalyzed, and catalyzed nuclear reactions are briefly discussed, after which different proposals for rocket engine systems and the ignition of such nuclear reactions are considered. It is shown that an extension of deliberations on the employment of thermonuclear reactions in rockets must be conducted in close connection with deliberations on development of a stationary fusion reactor, and that both directions are substantially and similarly influenced by new findings in the sphere of plasma physics. An outline of plasma physics, particularly transport phenomena in plasmas, is given. It is shown in conclusion how such theoretical deliberations can be used to design special plasma models, as exemplified by an earlier engine proposal of the author. Although prospects do exist for later use of thermonuclear reactions in rockets, a number of essential prerequisites are still to be created.

Stezhinskiy, A. I.
THE COMBUSTION OF GAS MIXTURES IN A PISTON ENGINE (Issledovaniye Protsessa Sgoraniya Gasovykh Smesey v Porshnevom Dvigatele). June 60 [8]p. 1 ref. RTS no. 1336.
Order from LC or SLA mi$1.80, ph$1.80 60-19876

Trans. of [Akademiya Nauk URSR, Kiev]. Instytut [Vykorystannya] Gazu v Komunal['nomu Hospodarstvi] i Promyshlovosti. Trudy, 1955, v. 3, p. 105-113.

The ignition limits of methane/nitrogen/oxygen mixtures diverge relative to those for normal air as the oxygen concentration increases. Rich mixtures used with oxygen-rich air give combustion times comparable to those given by normal air and so ensure that the engine works normally. The induction period is controlled by the composition of the mixture. The flame propagation rate increases with the oxygen content of the air; the effect is most marked with weak mixtures. The maximum combustion rate is largely independent of the oxygen content of the air and occurs when α is about 0.8. (Author)

Manufacturing Equipment and Processes

*AVTOMATICHESKAYA SVARKA (USSR) 1960 [VOL. 13] (Automatic Welding). [1960]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 2, p. 3-96, abstracts 1-21, PB 141 125T-24
No. 3, p. 3-96, abstracts 1-18, PB 141 125T-25

Consists of abstracts in English.

*BYULLETEN' IZOBRETENIY (USSR) 1959 (Bulletin on Inventions). [1960]
Order from OTS $1.90, $10.00/6 mo.
Foreign $2.15, $11.50/6 mo.

No. 13, p. 2-71, abstracts 1-265, PB 141 014T-20
No. 16, p. 5-87, abstracts 1-317, PB 141 014T-19

Consists of abstracts in English.

CHEAP PRODUCTION METHODS OF SURFACE-HARDENING MACHINE COMPONENTS IN THE SOVIET UNION. [1960] [3]p. M 1084.
Order from LC or SLA mi$1.80, ph$1.80 60-13889

Trans. of unidentified [Russian] mono., n. p., n. d.

Mention is made of shot blasting; a method of pressing rollers on to the work while it is rotating; the application of rolling to forging hammer plungers at automobile, railway locomotive, and wagon building factories; and methods where balls are rotated at high speed and exert radial pressure, or rollers are mounted on axles at the periphery of rotating disks.

TECHNICAL PROGRESS AND SCIENCE IN THE USSR. 2 Aug 60, 11p. 1 ref. JPRS: 3638.
Order from OTS $0.50 60-31498

Trans. of Priroda (USSR) 1959, v. 48, no. 8, p. 3-10.

The goals set forth by the June 1959 Plenum of the Central Committee of the Communist Party of the Soviet Union are praised.

USSR ELECTRONIC AND PRECISION EQUIPMENT [NO. 23, 11 JULY 60]. [1960] [52]p. 151 refs.
Order from LC or SLA mi$3.60, ph$9.30 60-23243

Trans. of unevaluated information selected from Russian-language periodicals.

USSR ELECTRONIC AND PRECISION EQUIPMENT [NO. 24, 1 AUG 60]. [1960] [21]p. 50 refs.
Order from LC or SLA mi$2.70, ph$4.80 60-23244

Trans. of unevaluated information selected from Russian-language periodicals

USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT [NO. 23, 18 JULY 60]. [1960] [49]p. 98 refs.
Order from LC or SLA mi$3.30, ph$7.80 60-17670

Trans. of unevaluated information selected from foreign-language periodicals.

USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT [NO. 24, 12 AUG 60]. [1960] [38]p. 75 refs.
Order from LC or SLA mi$3.00, ph$6.30 60-23242

Trans. of unevaluated information selected from foreign-language periodicals.

Bornscheuer, Friedrich W., Martin, Hans, and Strigl, Georg.
BRANCH PIPE OR DISTRIBUTION ELEMENT, tr. by P. C. C. 29 July 60, 4p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-23090

Trans. of French patent 1,092,797, gr. 5, cl. 3, appl. 5 Feb 54, granted 10 Nov 54, pub. 27 Apr 55 (appl. in Germany 6 Feb 53, granted 9 Feb 56, no. 940,081, pub. 8 Mar 56) by Maschinenfabrik Augsburg-Nürnberg A.G., Germany.

The pipe sections obtained by the spherical section method and extending out of the sphere center are spread out along their axial directions and are connected by simple elliptical strips of uniform width which form the internal flanges of reinforcement plates.

Droubay, Jean-Émile-René.
FOLLOWER PISTON FOR BALL-POINT WRITING DEVICE, tr. by J. M. H. 18 July 60, 4p. (figs. résumé omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-23089

Trans. of French patent 1,079,997, gr. 18, cl. 1, appl. 21 Apr 53, granted 26 May 54, pub. 6 Dec 54.

Duchinskiy, B. N.
ENDURANCE OF ELEMENTS OF WELDED BRIDGE CONSTRUCTIONS UNDER VARIABLE AND REVERSIBLE STRESSES (Vynoslivost' Elementov Svarnykh Mostovykh Konstruktsii pri Peremennykh i Znakoperemennykh Napryazheniyakh). May 60 [89]p. 45 refs. RTS 1184.
Order from LC or SLA mi$4.80, ph$13.80 60-17907

Trans. of Ts[entral'nyy] N[auchno]-I[ssledovatel'skiy] I[nstitut] S[udostroyeniya]. Trudy, 1956, no. 20, p. 86-162.

The results are given of tests made in 1952 and 1953 on killed low-carbon steel (Grade 3), and a new method is described for constructing endurance curves, by using logarithmic coordinates, for the determination of fatigue strengths from results of fatigue tests on single specimens. The values of effective stress concentration factors are given for different welded joints and elements of bridges and building constructions. The application of the pulsator results to the design of elements of welded bridge constructions is considered and equations are introduced for determining the reduction coefficients of the permissible stresses.

Kreymer, G. D., Sidorin, I. I., and Tishchenkova, E. F.
FATIGUE STRENGTH OF TUNGSTEN CARBIDE-COBALT ALLOYS (Ustalochnaya Prochnost' Metallokeramicheskikh Tverdykh Splavov Karbid Vol'frama-kobal't). Feb 60 [6]p. 5 refs. RTS 1280.
Order from LC or SLA mi$1.80, ph$1.80 60-15661

Trans. of Akademiya Nauk SSSR. Otd[eleniye] Tekh[nicheskikh] Nauk. Izvestiya, 1958, no. 3, p. 113-118.
Another translation is available from HB $5.85 as HB-4508, Mar 59.

The fatigue limit was determined for alloys with cobalt contents of 4, 6, and 8% at room and high temperatures (1000°C); and correlated with cobalt content and the grain size of the tungsten carbide. The importance is confirmed of the initial plasticity as a measure of the resistance of the material to deformation on cyclic loading.

Krüger, Fritz.
TOUCH BOARD FOR LEARNING TO TYPEWRITE, tr. by J. M. H. 7 July 60, 4p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-23096

Trans. of German patent 839,122, cl. 42 n, gr. 6/05, pat. from 11 Jan 49, appl. 20 Sep 51, granted 10 Apr 52, pub. 15 May 52, by Olympia Werke West G.m.b.H.

Kuz'min, N. F.
THE COEFFICIENT OF FRICTION IN A HEAVILY-LOADED CONTACT REGION [1960] [11]p. 13 refs. M1239.
Order from LC or SLA mi$2.40, ph$3.30 60-15768

Trans. of Vestnik Mashinostroyeniya (USSR) 1954 [v. 34] no. 5, p. 18-26.

Experiments on rollers with slipping varying from none (pure rolling) to 70 cm/sec yielded data from which the following formula for the local coefficient of friction was derived $f = \frac{\nu_{ck}/\nu_k}{k_1 + k_2(\nu_{ck}/\nu_k) + k_3|\nu_{ck}/\nu_k|^2 + k_4|\nu_{ck}/\nu_k|^2}$, where (ν_{ck}/ν_k) is the ratio of the slipping speed to the sum of the rolling speeds of both rollers in percent, and the k_1, k_2, k_3, k_4 are empirical constants dependent upon the lubrication, etc.

Markov, N. M.
THE THEORETICAL BASIS FOR THE SELECTION OF PERMISSIBLE SURFACE ROUGHNESS IN THE MANUFACTURE OF TURBINE BLADES (Teoreticheskoye Obosnovaniye Vybora Dopustimoy Sherokhovatosti Poverkhnosti Turbinnykh Lopatok pri ikh Izgotovlenii). Dec 59, 11p. (6 figs. omitted) 5 refs. M1411.
Order from LC or SLA mi$2.40, $3.30 60-17229

Trans. of Energomashinostroyeniye (USSR) 1957, v. 5, no. 7, p. 18-22.

Simple approximate formulae are presented which allow one to evaluate the permissible roughness.

Moskatov, P. G.
ALONG THE ROAD OF TECHNICAL PROGRESS. Jan 60 [285]p. 3 refs. F-TS-9635/III.
Order from LC or SLA mi$11.10, ph$44.10 60-19102

Trans. of mono. Po Puti Tekhnicheskogo Progressa, Moscow, 1957.

Progress is reported in machine-building, mechanization and automation of production, electric power development, metallurgy, the coal industry, petroleum and gas, chemical processing, transportation and communications, construction, and agriculture.

Ostrovskaya, S. A.
SOME PROBLEMS OF CRYSTALLIZATION CRACKING IN ELECTROSLAG WELDING. June 60, 5200 words.
Order from HB $9.80 HB-4866

Trans. of Avtomaticheskaya Svarka (USSR) 1957, v. 10, no. 4[55] p. 33-47.

Yerokhin, A. A.
ON THE DESIGN OF ELECTRODE COATINGS FOR ARC WELDING (O Raschete Pokrytiy Elektrodov dlya Dugovoy Svarki). June 60 [16]p. 6 refs. RTS 1421.
Order from LC or SLA mi$2.40, ph$3.30 60-19570

Trans. of Svarochnoye Proizvodstvo (USSR) 1959, no. 1, p. 16-20.

ACTIVATION OF THE AUTOMATIC BLOCK, WITH DESTINATION SELECTOR TRAIN ANNOUNCER, ON THE TURIN - TROFARELLO LINE, AND OF A REMOTE-CONTROLLED AUTOMATIC CENTRAL APPARATUS AT SANGONE JUNCTION; ACTIVATION OF ELECTRIC INSTALLATIONS # 48, tr. by A. D. S. [1950] [7]p. (7 figs. omitted). H-3776/D.
Order from OTS $0.50 59-21167

Trans. of mono. Attivazione del Blocco Automatica, con Annunzio dei Treni Selezionato per Destinazione, sulla Linea Torino - Trofarello e di un Apparato Centrale Automatico Regolato a Distanza nel Bivio Sangone. Attivazione Impianti Elettrici 48, Rome, June 58.

ACTIVATION OF THE ELECTRIC CENTRAL APPARATUS AT LAVINO; ACTIVATION OF ELECTRIC INSTALLATIONS #31, tr. by A. D. S. [1959] [6]p. (7 figs. omitted). H-3776/A.
Order from OTS $0.50 59-21165

Trans. of mono. Attivazione Apparati Centrali Elettrici Di Lavino. Attivazione Impianti Elettrici 31, Rome, 1956.

ACTIVATION OF THE NEW, PUSHBUTTON-TYPE, ELECTRIC ROUTING CENTRAL APPARATUS AT NAPLES CENTRAL STATION: ACTIVATION OF ELECTRIC INSTALLATIONS #44, tr. by A. D. S. [1959] [9]p. (9 figs. omitted). H 3776/C.
Order from OTS $0.50 59-21166

Trans. of mono. Attivazione del Nuovo Apparato Centrale Elettrico a Itinerari del Tipo a Pulsanti nella Stazione di Napoli C. Attivazione Impianti Elettrici 44, Rome, 26 May 57.

INSTALLATION OF THE CENTRAL OPERATION CONTROLLER'S OFFICE AT THE BOLOGNA RR NODE; ACTIVATION OF ELECTRIC INSTALLATIONS #37, tr. by A. D. S. [1959] [8]p. (9 figs. omitted). H-3776/B.
Order from OTS $0.50 59-21149

Trans. of mono. Impianto del Dirigente Centrale operativo del Nodo di Bologna. Attivazione Impianti Elettrici 37, Rome, 5 Feb 57.

ROLLING CHASSIS FOR CHEESE VATS OR THE LIKE, tr. by J. M. H. 1 July 60, 7p. (4 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-23091

Trans. of French patent 1,162,747, gr. 2, cl. 4, Internat. cl. A 01 j, appl. 2 Nov 56, granted 14 Apr 58, pub. 16 Sep 58 (appl. in Germany 4 Nov 55, per statement of applicant) by Aplenland Maschinenbau G.m.b.H., Germany.

The rolling chassis is provided with a supporting leg adjustable in height and forming with two wheels a three point support.

TRANSPORTATION, COMMUNICATIONS, AND ELECTRIC POWER IN THE USSR [NO. 30, 29 JULY 60]. [1960] [77]p. 120 refs.
Order from LC or SLA mi$4.50, ph$12.30 60-23241

Trans. of unevaluated information selected from Russian-language periodicals.

Dzyadzio, A. M. and Kemmer, A. S.
THE QUESTION OF DETERMINING THE TERMINAL VELOCITY OF PARTICLES (K Voprosu ob Opredelenii Skorostey Vitaniya Chastits). May 60 [8]p. 1 ref. RTS 1315.
Order from LC or SLA mi$1.80, ph$1.80 60-17920

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy. Pishchevaya Tekhnologiya (USSR) 1958, no. 2, p. 110-114.

Measurements with soybeans, maize, and wheat showed that in vertical pneumatic conveying the mean velocity (V_m) of the material is approximately the difference between the airspeed (V) and the terminal velocity (V_v) of the particles. This permits the theoretical velocity of motion of the material, and hence the pressure losses (H_m) to be calculated in kg/sq m from the equation

$$H_m = \lambda_m \mu \frac{l}{D} \frac{PV^2}{2} = 2.74 \times 10^{-5} \frac{V}{V_m} \left(\frac{V_v D}{}\right)^{0.5} \mu \frac{l}{D} \frac{PV^2}{2}$$

if the flotation speed is known. Here λ_m is the coefficient of resistance in the movement of the material, μ is the coefficient of concentration, l and D are the length and inside diameter of the pipe, and P is air density. Equilibrium velocities (approximately the velocities at which particles are carried away) are tabulated that were determined (in 13- , 24- , 39- , 60- , and 10-mm inside diam pipes) for wheat, barley, rye, buckwheat, mullet, oats, polished peas, polished shelled peas, soybeans (large and small), soya meal, large maize, Setaria italica, superphosphate (granulated and ground), apatite, river sand, granulated sugar, and ground Baskunchak lake salt.

Fischer, Joachim
ENTHUSIASM FOR AUTOMATION AT THE RENAULT PLANT (Begeisterung für die Automation bei: Renault) tr. by W. E. C. [1959] [8]p. (8 figs. omitted) H-3153.
Order from LC or SLA mi$1.80, ph$1.80 59-16295

Trans. of Motor-Rundschau, Frankfurt a.M. (Germany) 1958, no. 21, p. 730-732.

Heidemann, Georg.
VEHICLE WITH STRUCTURES WHICH CAN BE SET DOWN AND LIFTED BY THE HYDRAULIC TIPPING MECHANISM, tr. by C. P 6 July 60, 7p. (3 figs. omitted) 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-23097

Trans. of German patent 959,884, cl. 63 c, gr. 39, International cl. B 62 d, pat. from 5 Mar 55, appl. 13 Sept 56, granted 21 Feb 57, pub. 14 Mar 57, by Xaver Fendt & Co.

Herinckx-Pirlot, J., Leburton, J. P. and Magnes, Cl
THE PLACE OF THE NATIONAL RAILWAY COMPANY OF BELGIUM IN THE NATIONAL ECONOMY. [1960] [34]p. (2 graphs omitted). H-4679.
Order from OTS $1.00 60-21001

Trans. of mono. la Place de la Société Nationale des Chemins de fer Belges dans l'Economie Nationale, Brussels, 1958.

Okamoto, Toshio.
RATIONALIZATION OF PRODUCTION EQUIPMENT IN THE ISUZU AUTOMOBILE COMPANY (Isuzu Jidosha no Seisan Shisetsu Gori-ka) tr. by J. R. W. [1959] [11]p. (10 figs. omitted). H-2782B.
Order from LC or SLA mi$2.40, ph$3.30 59-14893

Trans. of Heiki to Gijutsu (Japan) 1958, no. 8, p. 22-31.

MATERIALS

PLASTE UND KAUTSCHUK (GERMANY) 1960 [VOL. 7] NO. 1, SELECTED ABSTRACTS [Plastics and Rubber]. [1960] [8]p. GER/4-60-1-(3, 5-7, 9, 24)/27.
Order from LC or SLA mi$1.80, ph$1.80 60-17848-1

Consists of selected abstracts in English.

SILIKAT TECHNIK (EAST GERMANY) 1959 [VOL. 10] NO. 9, SELECTED ABSTRACT [Technology of Silicates]. [1960] [2]p. GER/5-59-9-31/34.
Order from LC or SLA mi$1.80, ph$1.80 60-17073-9

Consists of selected abstract in English.

Fedotova, O. Ya., Losev, I. P. and others.
SYNTHESIS AND USE OF SOME AROMATIC AND ARYL ALIPHATIC POLYUREAS. [1960] 7p.
Order from ATS $7.50 ATS-33M42R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1960, v. 33, no. 4, p. 962-968.

Kulikov, A. A.
TROPICAL TEST CHAMBERS. [1960] [14]p. M 1612.
Order from LC or SLA mi$2.40, ph$3.30 60-19956

Trans. of V[sesoyuznyy] E[lektrotekhnicheskiy] I[nstitut]. Trudy (USSR) 1958, v. 62, p. 258-271.

Descriptions are given of the following chambers produced in the USSR: (1) The thermal humidity chamber TVK-1, (2) thermal humidity chamber MRTP, (3) thermal humidity chamber VEI, (4) the "room" type chamber, (5) the mould-resistance chamber, and (6) the solar-radiation chamber.

Yustova, Ye. N.
WHITENESS, AND METHODS OF MEASURING IT (O Belizniye i Sposobakh yeye Izmereniya). Jan 59 [9]p. 9 refs. C.T.S. No. 594.
Order from LC or SLA mi$1.80, ph$1.80 60-23078

Trans. of Svetotekhnika (USSR) 1957, v. 3, no. 2, p. 16-19.

Ceramics and Refractories

STEKLO I KERAMIKA (USSR) 1960 [VOL. 17] (Glass and Ceramics). [1960]
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

No. 1, p. 1-48, abstracts 1-17, PB 141 068T-22
No. 2, p. 1-48, abstracts 1-21, PB 141 068T-23

Consists of abstracts in English.

Mazelev, L. Ya.
BORATE GLASSES. 1960, 166p.
Order from CB $10.00

Trans. of unidentified Russian mono., n. p., n. d.

Yen, Tung-sheng.
DEVELOPMENT OF SILICATE RESEARCH AND TECHNOLOGY IN CHINA DURING THE PAST DECADE. 15 June 60, 9p. JPRS: 2784.
Order from OTS $0.50 60-11727

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 23, p. 776-779.

Topics covered include (1) cement, (2) fire-resistant materials, (3) glassware, and (4) ceramics and porcelain.

Zaliznyak, A. A.
MECHANISM OF THE WEAR OF GLASS TANK LININGS BY THE VOLATILE CONSTITUENTS OF BOROSILICATE GLASS (Mekhanizm Razrusheniya Kladki Steklovarennykh Pechey Letuchimi Komponentami Borosilikatnogo Stekla). Jan 59 [5]p. C. T. S. no. 597.
Order from LC mi$1.80, ph$1.80 60-23080

Trans. of Steklo i Keramika (USSR) 1957 [v. 14] no. 1, p. 19-21

Positive results were obtained when silica brick was replaced by high-alumina brick of mullite composition in the crown and firebridge of a surface used for melting high-boron glass. Although the refractory was destroyed in the usual way, the rate of the process was slower.

Fuels, Lubricants, and Hydraulic Fluids

PETROL SI GAZE (RUMANIA) 1959 [VOL. 10] SELECTED ABSTRACTS [Oil and Gas]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 3, 60-17059-3
No. 10, 60-17059-10

Consists of selected abstracts in English.

STANDARD SPECIFICATION; BITUMINOUS COALS AND ANTHRACITES, DETERMINATION OF SPECIFIC GRAVITY. [1960] 3p. 2 refs. M1076.
Order from LC or SLA mi$1.80, ph$1.80 60-13881

Trans. of Russian Standard GOST 2160-43.

Basevich, V. Ya.
INVESTIGATION OF THE RATE OF BURNING OF ATOMIZED FUEL IN A TURBULENT FLOW (Issledovaniye Skorosti Goreniya Raspylennogo Topliva v Turbulentnom Potoke) tr. by T. E. Turner. [1960] [13]p. 10 refs. H 4803.
Order from LC or SLA mi$2.40, ph$3.30 60-17620

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1959, v. 33, no. 5, p. 1080-1086.
Another translation is available from ATS $11.40 as ATS-05L37R [1960] 9p.

The value $k = 5.9 \times 10^{-3}$ sq cm/sec was determined experimentally for the equation $D_o^2 - D^2 = kt$ under the condition of the burning of an atomized fuel in a turbulent flow. Here D_o and D are the initial and flowing diameters of the drops, t is burning time, and k is the diffused constant of the velocity of the burning drops. The theoretical ratio between the velocities of the burning of drops and the vapor phase of the fuel, when the latter takes the form of a noncombustible mixture, was checked. The experiments showed the turbulent character of the burning zone of the drop.

Khudokormov, N. P.
THE DIRECTION TAKEN BY THE GAS FLOWS IN THE COAL CHARGE IN A COKE RETORT WHEN MANUFACTURING COKE (Napravleniye Gazovykh Potokov v Ugol'noy Zagruzke pri Koksovanii). Dec 59 [14]p. 15 refs. TIL/T.5052; M1380.
Order from LC or SLA mi$2.40, ph$3.30 60-17207

Trans. of Stal' (USSR) 1955 [v. 15] no. 4, p. 295-301.

In good coking coals and coal seams producing metallurgical coke, the yield of gaseous products from the cold side represents some 2 to 3% of the total volume of gaseous products in the coking process and a yield of tarry products of approximately 7 to 8% of the total yield. The gaseous products move through the mass of semi-coke and coke in the direction from the axial plane to the heating walls of the retort. The investigation of the influence exerted by technological factors (the rate of heating, the degree of crushing, the degree of compacting of the coal charge and the creation of a pressure differential between the cold and the hot sides) on the relation of the gaseous flows of the cold and the hot sides demonstrated that for coals with clearly defined plastic layers this relation remains practically constant in all changes of the conditions of coking. A marked change in the relation between the gas flows and the coal charge may be achieved by creating a corresponding differential in pressure between the cold and the hot sides, when coking charges with a large proportion of coals of poor coking properties which produce a plastic layer with high gas penetrability.

Lyishevskiy, A. S.
ON THE INFLUENCE OF TURBULENCE UPON THE DISINTEGRATION OF LIQUID JETS, tr. by G. J. Tee. [1960] [10]p. 1 ref. M1366.
Order from LC or SLA mi$1.80, ph$1.80 60-17199

Trans. of [Politekhnicheskiy Institut] Novocherkassk. [Nauchnyye Trudy] (USSR) 1957, v. 39, no. 53, p. 81-86.

Analysis of previous experimental data of Yugaz, Tsan, and Schweitzer showed that the outflow of fuel oil in short nozzle orifices for injection in internal combustion engines is controlled by the Reynolds number (Re). The influence on the disintegration of the jet is much greater in a turbulent than in a laminar system. Empirical relations were derived for the dependence of $1/d_c$ on Webers number and Re under conditions of laminar, transitional, and turbulent outflow, where d_c is the diameter of the orifice.

Panov, V. V. and Sobolev, Yu. S.
SYNTHETIC LUBRICATING OILS. Jan 60 [48]p. MCL-185/V.
Order from LC or SLA mi$3.30, ph$7.80 60-19046

Trans. of Russian mono. Smazochnye Masla dlya Aviashionnykh Gazoturbinnykh Dvigateley (Lubricating Oils for Gasturbine Aviation Engines) 1958, chap. 4, p. 44-82.

Topics discussed include: Lubricating oils based on complex aliphatic esters; properties of aliphatic esters; utilization of ester lubricating oils; esters of silicic acid; and organophosphorus and halogen compounds.

Petrusevich, A. I.
FUNDAMENTAL CONCLUSIONS FROM THE CONTACT HYDRODYNAMIC THEORY OF LUBRICATION. Doctoral thesis. [1960] [13]p. M 1238.
Order from LC or SLA mi$2.40, ph$3.30 60-15767

Trans. of Akademiya Nauk SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izvestiya, 1951, no. 2, p. 209-223.

Information is presented on: (1) the role of contact deformations in the theory of lubrication, (2) the cases of pure rolling of cylinders and of cylinders rolling with slip (sliding), (3) the effect of roughness on the working surfaces, (4) the question of fatigue contact strength in the light of the contact-hydrodynamic theory of lubrication, and (5) questions of seizing, friction, and wear, and the contact-hydrodynamic theory of lubrication.

Sedachev, V. M.
A NEW METHOD FOR THE PRODUCTION OF A LIME-OIL SUSPENSION AND A SYNTHETIC GREASE (Novyy Sposob Proizvodstva Izvestkovo-Maslyanoy Suspenzii i Sinteticheskogo Solidola). Jan 59 [2]p. C. T. S. no. 596.
Order from LC or SLA mi$1. 80, ph$1. 80 60-23079

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1957 [v. 2] no. 10, p. 72.

Tayts, E.
PROCESS OF FORMATION OF COKE AND THE FORECASTING OF ITS QUALITY. [1960] [11]p. 14 refs. A. 1668/SEH; M 1428.
Order from LC or SLA mi$2. 40, ph$3. 30 60-17243

Trans. of Koks i Khimiya (USSR) 1958, no. 3, p. 19-25.

A review of the literature on the factors in influencing coke strength, the causes of different degrees of fissuration in coke, and the strength of coke lumps showed that the strength of a coke depends primarily on the plastic properties of the heated coal. It is shown that the strength index (Q) of a coke can be expressed by $Q = K_1 Cn(100 - \lambda)$, where Cn is the coking capacity, K_1 is a constant, and λ is proportional to the shrinkage gradient. The characteristics of 15 charges and the coke obtained from them are tabulated.

Leather and Textiles

KHIMICHESKIY VOLOKNA (USSR) 1959, NO. 6, SELECTED ABSTRACTS [Synthetic Fibers]. [1960] [15]p. SOV/183-59-6-(1-6, 8, 10-11, 14-15, 21)/27.
Order from LC or SLA mi$2. 40, ph$3. 30 60-17870-6

Consists of selected abstracts in English.

Walther, R.
THE FELTING OF WOOL (Das Filzen der Wolle) tr. by M. Slade. [1960] [14]p. (foreign text included) 20 refs. Trans. no. 4666.
Order from LC or SLA mi$2. 40, ph$3. 30 60-17505

Trans. of Melliand Textilberichte (West Germany) 1958, v. 39, no. 11, p. 1240-1243.

A survey.

Photographic Materials

Artyushin, L. F. and Nyuberg, N. D.
EVALUATION OF THE QUALITY OF COLOR PHOTOGRAPHIC IMAGES, tr. by Carlo A. Bauman. [1960] 17p. 6 refs. T-3211.
Order from LC or SLA mi$2. 40, ph$3. 30 60-16747

Trans. of Tekhnika Kino i Televideniya (USSR) 1959, v. 3, no. 4, p. 11-19.

The possibilities for evaluating the quality of color photographic images are studied. Basic rules are established for a method of comparison. The results of an investigation of the effect of exposure conditions on the color negative used for printing have been described. (Author)

Levi, S. M., Maslenkova, N. G., and Kirillov, N. I.
PRECISE AND UNIFORM COATING OF PROCESSING SOLUTIONS ON A CONTINUOUSLY MOVING FILM, tr. by Carlo A. Bauman. [1960] 16p. 8 refs. T-3191.
Order from LC or SLA mi$2. 40, ph$3. 30 60-16754

Trans. of Tekhnika Kino i Televideniya (USSR) 1959, v. 3, no. 12, p. 18-25.

Basic conditions providing for a precise and uniform coating of solutions on a continuously moving film are examined. On the basis of equations, it has been shown how the volume of the solution coated on the film depends on different factors for different types of coating arrangements. The effect of wetting agents when processing solutions are coated on a continuously moving film has been examined and conditions at which the solution is distributed uniformly over the film surface have been shown. The effect of different wetting agents on the uniformity of the coatings of developers and fixers on the film has been examined experimentally. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
PHOTOGRAPHIC CHEMICALS AND EMULSIONS. June 60, 8p. 112 refs. OTS Selective Bibliography SB-417.
Order from OTS $0.10 OTS SB-417

A bibliography of reports listed in the two OTS monthly abstract journals: U.S. Government Research Reports and Technical Translations. Reports listed were added to the OTS collection during the period 1950 to July 1960.

Santen, Jacobus Johannes Marie van.
CASSETTE FOR A FILM STRIP, ESPECIALLY FOR A SO-CALLED MINIATURE FILM (Cassette voor een Strook Film, in het Bijzonder Zoogenaamde Kleinbeeldfilm) tr. by P. Pallamary. 5 Apr 60, 15p. (8 figs. omitted). No. 4-2-60.
Order from LC or SLA mi$2. 40, ph$3. 30 60-17133

Trans. of Octrooi no. 57939 (Netherlands patent no. 57939) cl. 57a. 11, (57a. 1; 57a. 5) issued 15 Oct 45.

The present cassette is characterized in that the two walls of the box-shaped cassette are provided with opposite apertures the size of the picture format. Between these walls a slide can be inserted in which are placed, behind each other, a bilaterally free ground glass and/or a focusing negative, and a space open on one side for receiving a piece of film for a limited number of pictures (for instance, three).

Smirnov, O. K., Levi, S. M., and Averbakh, K. O.
REPELLENCY SUPPRESSION BY WETTING AGENTS IN PHOTOGRAPHIC EMULSION COATINGS. PT. III. REPELLENCY SUPPRESSION OF SULFOSUCCINIC ACID ESTERS AND THEIR INFLUENCE ON KINETIC WETTING. [1960] 8p. 17 refs. T-3180.
Order from LC or SLA mi$1.80, ph$1.80 60-16540

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1959, v. 4, no. 6, p. 423-426.

The sodium salt of sulfosuccinic acid dihexyl ester had the best repellency suppression property and the highest critical rate of wetting of the 6 esters investigated. It was found to be the most effective wetting agent for coating photographic emulsions. It has a crystal form, is easily freed from impurities, and can be prepared in the form of a pure dry compound.

Wood and Paper

PRACTICAL RESEARCH WORK ON SAWING AND ON SAW TEETH (Recherches Pratiques sur la Sciage et les Dentures). [1959] [24]p. Trans. no. 2118.
Order from SLA mi$2.70, ph$4.80 60-10926

Trans. of Centre Technique du Bois, Paris. Service des Recherches. Etude Technique [sic] (France) 1953, Document S.2.

Results are given of tests made in 1952 on band sawing of logs from which the bark had not been removed. Results show that certain kinds of teeth permit faster and neater sawing, while reducing the kerf losses and the power consumption. The choice of cutting speed has to be appropriate to the machine, the blade and the timber worked. Studies on the maintenance of the tools and on the balancing of the blades on the pulleys are included. (See also 60-10925)

Bucher, Hans.
REACTIONS DURING PULP PARCHMENTIZATION USING SULPHURIC ACID. [1960] [12]p. (11 figs. omitted) 23 refs.
Order from SLA mi$2.40, ph$3.30 60-16801.

Trans. of das Papier (West Germany) 1957, v. 11 [no. 7/8] p. 125-133.

Erdtman, Holger.
HEARTWOOD AND THE CHEMISTRY OF HEARTWOOD. [1960] [15]p. 50 refs.
Order from SLA mi$2.40, ph$3.30 60-16756

Trans. of Svensk Pappers-tidning, 1958, v. 61, [no. 18] p. 625-632.

Information is surveyed on (1) heartwood formation, (2) wound heartwood, (3) the rot resistance of heartwood, (4) the difficulty of heartwood impregnation, (5) chemical investigations of the components of heartwood, (6) pine heartwood substances, and (7) the heartwood substances from the cypress family.

Kaltenbach, J.
THE PROCESS OF SIZING ON THE PAPER MACHINE AND THE INFLUENCE OF CALENDERING ON SIZING, PT. 2. June 60, 6p. (24 figs. 19 tables omitted) 2 refs.
Order from SLA mi$1.80, ph$1.80 60-16778

Trans. of Wochenblatt [für Papierfabrikation] (West Germany) 1960, v. 88, no. 1, p. 7-[14].

See also 60-14287

Keller, R.
FUNDAMENTAL RESEARCHES ON SAWING (Recherches Fondamentales sur le Sciage). [1960] [33]p. Trans. no. 2119.
Order from SLA mi$3.00, ph$6.30 60-10925

Trans. of Centre Technique du Bois, Paris. Services des Recherches. Etude Technique [sic] (France) 1953, Document S.1.

Research was undertaken to determine the interrelation between the different elements in sawing (cutting speed, tooth pitch, number of teeth/sec., feed speed, width of kerf); characteristics and profiles of teeth; quality of steels (the cutting life); effective power for cutting; capacity of motors; classification of woods into groups of similar characteristics; quality of sawing; the smallest possible kerf loss; and the tension in setting up and the balance of blades on the pulleys. (See also 60-10926)

Voitsekhovskiy, R. V.
CHANGE IN THE HYDROPHILIC BEHAVIOUR OF CELLULOSE IN THE PAPERMAKING PROCESS (Izmeneniye Gidrofil'nosti Tsellulozy v Bymazhnom Proizvodstve). [1960] 9p. 14 refs. Trans. no. 4520.
Order from LC or SLA mi$1.80, ph$1.80 60-16517

Trans. of Bumazhnaya Promyshlennost (USSR) 1958, v. 33, no. 6, p. 2-5.

A quantitative method of determining fixed water in paper pulp, cellulose, and paper was developed, based on the use of a refractometer (or interferometer) as a zero instrument for measuring the concentration of sugar solutions. The hydrophilic activity of cellulose is intensified during beating and hydroxide treatments, is decreased during the drying of the paper, and is slightly increased during thermal treatment of the dry paper.

MATHEMATICS

AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA MATEMATICHESKAYA, 1960, V. 24, NO. 1, P. 3-144 (News of the Academy of Sciences of the USSR. Mathematics Series). [1960] [8]p. SOV-38-60-24-1-(1-6)/6.
Order from OTS $0.50, $3.00/6 mo. PB 141 031T-14
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

USPEKHI MATEMATICHESKIKH NAUK (USSR) 1960, VOL. 15, NO. 1, P. 3-264 [Progress of Mathematical Sciences]. [1960] [52]p. SOV/42-15-1-(1-27)/27.
Order from LC or SLA mi$3.60, ph$9.30 60-17865-1

Consists of abstracts in English.

Chistova, Emiliya Aleksandrovna.
TABLES OF BESSEL FUNCTIONS OF THE TRUE ARGUMENT AND OF INTEGRALS DERIVED FROM THEM. Nov 59, 523p.
Order from PP $15.00

Trans. of mono. [Tablitsy Funktsiy Besselya ot Deystvitel'nogo Argumenta i Integralov ot Nikh] Moscow, 1958.

Hyman, Charles J.
GERMAN-ENGLISH MATHEMATICS DICTIONARY. [1960] 131p.
Pub. by Interlanguage Dictionaries Pub., Corp. 227 West 17th St., New York 11, N. Y. $8.00

Lusternik, L. A.
THE THEOREM ON THREE GEODESICS. [1960] [3]p. 2 refs. M1028.
Order from LC or SLA mi$1.80, ph$1.80 60-13731

Trans. of Russian mono. (essay) n.p., n.d.

If A_i^0 is a family of the class (A_i) for which $c(A_i^0) = c_i$, where $i = 1, 2, 3$, it is proved that A_i^0 contains a closed geodesic of length c_i. Here (A_i) denotes the class of all curves obtained from the family of curves A_i by the continuous deformation of the surface, $c(A)$ is the maximum length of the curves of family A, and c_i is the lower bound of the numbers $c(A)$ for all A in (A_i).

Pontryagin, L. S.
CHARACTERISTIC CYCLES ON DIFFERENTIABLE MANIFOLDS (Kharakteristicheskiye Tsykly Differentsiruyemykh Mnogoobraziy). 1950 [73]p. 8 refs. Trans. no. 32, M 997.
Order from LC or SLA mi$4.50, ph$12.30 60-13701

Trans. of Matematicheskiy Sbornik (USSR) 1947, v. 21, no. 63, p. 233-284.

Several invariants of closed differentiable orientable manifolds are constructed, which are analogous to spherical mapping for manifolds M^k embedded in a Euclidean space R^{k+s} of dimension $k + s$, where s is an arbitrary integer. The means by which the invariants are constructed are contained in the cycles of Stiefel.

Pugachev, V. S.
THEORY OF RANDOM FUNCTIONS AND ITS APPLICATION TO PROBLEMS OF AUTOMATIC CONTROL, PT. I. Nov 59 [266]p. 1 ref. F-TS-9546/V.
Order from LC or SLA mi$11.10, ph$39.60 60-19094

Trans. of mono. Teoriya Sluchaynykh Funktsiy i Yeye Primeneniye k Zadacham Avtomaticheskogo Upravleniya, Moscow, 1957, chaps. 1-8.

This volume is the first of a systematic presentation in three volumes of the applied theory of random functions and probability methods in the theory of automatic control (statistical dynamics of systems of automatic control). The latest Soviet methods of investigating the accuracy of systems of automatic controls, operating under the influence of arbitrary random disturbances, both stationary and nonstationary, are set forth. Methods for investigating the accuracy are provided not only for unidimensional but also for multidimensional systems having any arbitrary number of inputs and outputs. A considerable portion of the 3-vol work is devoted to methods for investigating the accuracy on nonlinear systems. Special attention is given to modern methods of determining the optimum characteristics of systems of automatic control (methods of statistical synthesis of systems of automatic control), based on the general theory of approximation of random functions. The theory of random functions and the probability methods of the theory of automatic control are set forth chiefly on the basis of the author's own work. Training in mathematics through the standard engineering college level is expected of the readers. This first volume is devoted mainly to providing a background in probability theory. The chapters are entitled: The probability of events and their properties; Random variables; Vectors of random variables; Characteristic functions of random variables; Functions of random arguments; The law of large numbers; The entropy of random variables and the quantity of information; and Random functions. (See also 60-19095, (60-19096)

Pugachev, V. S.
THEORY OF RANDOM FUNCTIONS AND ITS APPLICATION TO PROBLEMS OF AUTOMATIC CONTROL, PT. II. [1960] [329]p. F-TS-9546/V.
Order from LC or SLA mi$11.10, ph$50.10 60-19095

Trans. of mono. [Teoriya Sluchaynykh Funktsiy i Yeye Primeneniye k Zadacham Avtomaticheskogo Upravleniya, Moscow, 1957] chaps. 9-15.

Contents: Canonical expansion of random functions; Random vector functions; Stationary random functions; Theory of linear transformations of random functions; Investigating the accuracy of linear automatic control systems; Approximate investigation of the precision of nonlinear automatic control systems; and Theory of some classes of nonlinear transformations of random functions. (See also 60-19094, 60-19096)

Pugachev, V. S.
THEORY OF RANDOM FUNCTIONS AND ITS APPLICATION TO PROBLEMS OF AUTOMATIC CONTROL, PT. III. [1960] [221]p. 56 refs. F-TS-9546/V.
Order from LC or SLA mi$9.90, ph$34.80 60-19096

Trans. of mono. [Teoriya Sluchaynykh Funktsiy i Yeye Primeneniye k Zadacham Avtomaticheskogo Upravleniya, Moscow, 1957] chaps. 16-17, suppl. and appendix.

Contents: Theory of approximation of random functions and their application to determination of the optimum characteristics of automatic control systems; Determination of characteristics of random variables and random functions by experimental results; Supplement (Some data from the theory of linear transformations, and Some data from the theory of linear integral equations with symmetrical kernal); and Appendix (Tables of formulas and tables of functions) (See also 60-19095)

Sagalovich, Yu. L.
ON A MEASURE OF THE ORDERLINESS OF A BOOLEAN FUNCTION. June 60 [11]p. 13 refs. AFCRC-TN-60-593; MDF S-156.
Order from LC or SLA mi$2.40, ph$3.30 60-19861

Trans. of A[kemiya] N[auk] SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izvestiya: Energ[etika] i Avtom[atika] 1960, no. 1, p. 70-75.
Also available in paper copy from MDF as MDF S-156
MDF S-156.

Although almost all Boolean functions are realized by complex (in terms of the number of contacts) contact circuits, such circuits are rarely encountered in practice. The reason is that Boolean functions with a regular inner structure are more easily broken down by processing and the operating conditions of the appropriate switching circuits are more easily formulated. The most general quantitative characteristic of the inner regularity of a function is the entropy k which indicates the degree of interference-immunity of the function. The systematics of functions of logic algebra and the statistics of switching circuits can disclose the objective material for a study of certain properties of human intelligence at its contemporary level of development.

Steyskalova, I.
NET THEORY ELEMENTS AND THEIR APPLICATION IN NOMOGRAPHY. 14 July 60, 15p. 1 ref. JPRS: 5026.
Order from OTS $0.50 60-11920

Trans. of Vychislitel'naya Matematika (USSR) 1959, no. 4, p. 173-183.

Computing Devices

Kartsev, M. A.
ARITHMETIC UNITS FOR ELECTRONIC DIGITAL COMPUTERS. Library of Applied Analysis and Computer Mathematics. Mar 60 [159]p. 29 refs. MCL-285/V.
Order from LC or SLA mi$7.50, ph$24.30 60-19060

Trans. of mono. Arifmeticheskiye Ustroystva Elektronnykh Tsifrovykh Mashin, Moscow, 1958, 159p.

This textbook examines general questions in the design of arithmetic units: selection of the system of numeric coding, design of binary adders, methods of performing multiplication and division in the binary system of notation, and the logical circuits of arithmetic units. Along with a description of familiar variants, methods of comparative evaluation are discussed, as are certain new designs. The book is planned for use by scientific researchers and engineers engaged in the designing of electronic digital computers, and for students in the final years of higher educational institutions in fields having to do with the foregoing. (Soviet publisher's note)

Vega, L. M., Korolev, L. N. and others.
A PROGRAM OF AUTOMATIC DIFFERENTIATION FOR THE BESM COMPUTER. 16 June 60, 14p. JPRS: 2696.
Order from OTS $0.50 60-11665

Trans. of unidentified mono. (booklet) issued by Inst. of Precision Mechanics and Calculating Techniques, Moscow, 1959.

Some results of this program application to concrete mathematical expressions are presented and the program block-diagrams are given. (Author)

MECHANICS

Andreyev, L. Ye.
THE DESIGN OF CORRUGATED MEMBRANES. [1960] 24p. 5 refs.
Order from LC or SLA mi$2.70, ph$4.80 60-17435

Trans. of mono. Strength of Materials Calculations in Machine Design, a symposium ed. by S. D. Ponomarev, 1955, Moscow, p. 100-123.

The equation of the characteristic for small and large deflections is

$$p = (Eh/R^4)\left\{[4(n+3)h^2/3k(1-\mu^2/n]w_o + [32k/(m^2-9)][(1/6)-(3-\mu)/(m-\mu)(m+3)]w_o^3\right\},$$

where w_o is the deflection at the center of the membrane, p is the hydrostatic pressure, E is the elastic modulus of the material comprising the membrane, h is the wall thickness, R is the effective radium, $m = \sqrt{k(k_r)_p}$, $n = k(k_t)_u$, and $k = (k_r)_u = (k_t)_p$. The coefficients $(k_r)_p$, k, and $(k_t)_u$ are dependent on the

geometry of the membrane profile and are tabulated for the general case of a periodic profile. The absence of a quadratic term makes it impossible to determine the asymmetry of the characteristic of a corrugated membrane when pressure is applied from different sides of the membrane.

Beresnev, B. I., Vereshchagin, L. F., and Ryabinin, Yu. N.
CHARACTERISTICS OF THE RHEOLOGICAL BEHAVIOUR OF METALS EXTRUDED UNDER HYDROSTATIC PRESSURE. [1960] 12p. (10 figs. omitted) 9 refs. M1325.
Order from LC or SLA mi$2.40, ph$3.30 60-15836

Trans. of Akad[emiya] Nauk SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izvest[iya] 1957, no. 5, p. [48]-55.
Another translation is available from LSA $10.20 [1959] 3400 words.

Experiments showed that the hydrostatic extrusion of metals is effective. A comparison of the experimental results of hydrostatic extrusion with literature data on extrusion by ram indicates a number of advantages for hydrostatic extrusion. The total extrusion stress is considerably diminished because there is a reduced coefficient of friction between the metal and the die, and there is no loss of force in overcoming the frictional forces in the cylindrical part of the die.

Chi'en, Hsuen-hsien.
IN THE SERVICE OF THE NATIONAL ECONOMY. 26 July 60, 4p. JPRS: 2999.
Order from OTS $0.50 60-11902

Trans. of Priroda (USSR) 1959 [v. 48] no. 10, p. 67-69.

The Mechanics Laboratory of the Institute of Mathematics of the Chinese Academy of Sciences is described.

Gol'denveyzer, A. L.
ON REISSNER'S THEORY OF THE BENDING OF PLATES (O Teorii Izgiba Plastinok Rayssnera). May 60, 16p. 5 refs. Technical trans. F-27.
Order from OTS $0.50 60-21605

Trans. of Akad[emiya] Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1958, no. 4, p. 102-109.

A generalization of the theory of E. Reissner (J. Math. and Phys. 23: 184-191, 1944) shows that numerical coefficients, which may oscillate between unbounded limits, enter into the summands by which the theory differs from classical theory. While considering whether the elastic phenomena occurring near or far from the boundary exerts the greater influence on the correction contributed by the Reissner theory it is shown that an additional edge effect of the same order of magnitude is predicted near the boundary. The corrections of Reissner's theory are reduced to a boundary effect (stressed state) and a correctional stress state, the intensity of which are related to elastic phenomena near the boundary, where the law of the distribution of stress accepted by Reissner can be unreal. The refinements of B. F. Vlasov (Akad. Nauk SSSR. Otdel. Tekh. Nauk. Izvest. 1957: no. 12, p. 57-60) are "devoid of authenticity".

Gol'denveyser, A. L.
THEORY OF ELASTIC THIN SHELLS. [1959] 6p.
Order from MDF $2.00. MDF G-150

Partial trans. (table of contents) of mono. [Teoriya Uprugikh Tonkikh Obolochek] Mos[cow] 1953, 541p.

Kachurin, V. K.
NUMERICAL METHODS FOR SOLVING SOME PROBLEMS IN STRUCTURAL MECHANICS (Chislenniye Sposoby Resheniya Nekotoryikh Zadach Stroitel'noy Mekhaniki). July 59 [20]p. 4 refs. TIL/T.4877; M1244.
Order from LC or SLA mi$2.40, ph$3.30 60-15773

Trans. of [Institut Inzhenerov Zheleznodorozhnogo Transporta]. Sborn[ik] (USSR) 1954, v. 146, p. 294-312.

Numerical methods are given for the calculation of elastically-supported beams, and the calculation of bars in compression. The equations by which the proposed solution is calculated, are given in developed form for the case of a beam of variable cross-section. The solution is founded on energy analysis.

Katayev, G. I.
INSTALLATION FOR MEASURING TEMPERATURE DEPENDENCE OF MODULI OF ELASTICITY AND DAMPING DECREMENT WITH GREATER ACCURACY (Ustanovka dlya Izmereniya Temperaturnoy Zavisimosti Moduley Uprugosti i Dekrementa Zatukhaniya s Povyshennoy Tochnost'yu) tr. by S. E. [1960] 8p. (2 figs. omitted) 8 refs. H-4530.
Order from OTS $0.50 60-21196

Trans. of *[Zavodskaya Laboratoriya] (USSR) 1958 [v. 24] no. 10, p. 1258-1261.

Mikeladze, M. Sh.
STRENGTH OF A RAPIDLY ROTATING CYLINDER. Apr 60, 11p. 5 refs
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-4041

Trans. of Prikl[adnaya] Mat[ematika] i Mekhan[ika] (USSR) 1952, v. 16, p. 706-710.

The assumption of an incompressible material and a two-dimensional deformation leads to contradictions in the problem of the purely elastic condition of a rotating solid cylinder. The purely plastic condition is analyzed for (1) a long hollow cylinder of incompressible material with an axial force applied to its bases, and (2) a freely rotating drum, the walls and lateral surface of which are free of stress. Also determined is the elasto-plastic condition of a rotating cylinder.

Zhukov, A. M.
PECULIARITIES OF THE NEUTRAL LOAD CURVE (Nekotoryye Osobennosti Krivoy Neytral'nogo Nagruzheniya). May 60 [13]p. 11 refs. RTS 1329.
Order from mi$2.40, ph$3.30 60-17923

Trans. of Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1958, no. 8, p. 32-40.

Yield curves were determined for the cases of biaxial tension and tension and torsion combined, under conditions of no time effects being present nor intermediate states of stress being developed. The biaxial tension tests were made on tubular specimens of technically pure aluminum of R/δ between 9.4 and 11, and the combined tests were on steel 45 with R/δ between 11.8 and 29. Results showed that the elastic properties of a metal depend upon its previous plastic deformation. The neutral load curve is continuous and does not coincide with the corresponding Huber-Mises ellipse for either case.

Aerodynamics and Pneumatics

Bam-Zelikovich, G. M., Bunimovich, A. L, and Mikhaylova, M. P.
MOTION OF THIN BODIES AT HIGH SUPERSONIC VELOCITIES. 23 June 60, 12p. 9 refs. JPRS: 2909.
Order from OTS $0.50 60-11812

Trans. of Akademiya Nauk SSSR. [Otdeleniye Tekhnicheskikh Nauk]. Izvestiya: [Mekhanika i Mashinostroyeniye] 1960, no. 1, p. 33-40.

Results of the study by Hsue-shen Tsien on the similarity law of hypersonic flows (J. Math. and Phys. 25: no. 3, 1946) are generalized for the case of a three-dimensional motion in the presence of shock waves and vortexes. It is shown that the problem of the steady ambient gas flow past a thin body at a high supersonic velocity can be reduced approximately to the problem of unsteady gas motion in space with the number of dimensions being less by unity. Comparison of the results obtained and the available exact solutions determine the limits of the applicability of the approximation method.

Johansson, C. H. and Persson, G.
THE DIFFUSION OF MOIST AIR THROUGH SMALL ORIFICES, tr. by K. R. Fortman. 17 July 59, 10p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 SCL-T-263

Trans. of IVA (Sweden) 1943 [v. 14] p. 160-165.

METALLURGY

*FIZIKA METALLOV I METALLOVEDENIYE (USSR) (Physics of Metals and Metallography). [1960]
Order from OTS $0.80, $4.75/year
Foreign $1.05, $6.25/year

1959, v. 8, no. 5, p. 641-800, abstracts 1-29, PB 141 126T-17
1960, v. 9, no. 1, p. 3-160, abstracts 1-31, PB 141 126T-16

Consists of abstracts in English.

HUTNICKE LISTY (CZECHOSLOVAKIA) 1959 [VOL. 14] SELECTED ABSTRACTS [Metallurgical Journal]. [1960] [15]p.
Order from LC or SLA

No. 1, abstracts 4-11, 17-18, mi$2.40, ph$3.30, 60-17057-1
No. 3, abstracts 6-7, mi$1.80, ph$1.80 60-17057-3
No. 4, abstracts 2-4, 6-11, 18, mi$2.40, ph$3.30, 60-17057-4
No. 5, abstracts 1-2, 4-6, 9-11, 15-17, 19, mi$2.40, ph$3.30, 60-17057-5
No. 6, abstracts 4, 6-7, 9-14, 17-18, 23, mi$2.70, ph$4.80, 60-17057-6
No. 7, abstracts 3-4, 7-12, 14-15, 22, mi$2.40, ph$3.30, 60-17057-7
No. 9, abstracts 1-9, 11-12, mi$2.40, ph$3.30, 60-17057-9
No. 10, abstracts 7, 13, 18, mi$1.80, ph$1.80, 60-17057-10
No. 11, abstracts 8, 10, 12-13, 15, 18-20, mi$1.80, ph$1.80, 60-17057-11
No. 12, abstracts 2, 23-26, 30-31, mi$2.40, ph$3.30, 60-17057-12

Consists of selected abstracts in English.

HUTNIK (POLAND) 1959, VOL. 26, SELECTED ABSTRACTS [Metallurgist]. [1960]
Order from LC or SLA

No. 2, abstracts 2-4, mi$1.80, ph$1.80, 60-17055-2
No. 3, abstracts 1-6, mi$1.80, ph$1.80, 60-17055-3
No. 4, abstracts 3-6, mi$1.80, ph$1.80, 60-17055-4
No. 5, abstracts 2, 4, 7-9, mi$1.80, ph$1.80, 60-17055-5
No. 6, abstracts 2-5, mi$1.80, ph$1.80, 60-17055-6
No. 7/8, abstracts 2-5, 7-8, 10-11, 13-14, mi$2.40, ph$3.30, 60-17055-7/8
No. 9, mi$1.80, ph$1.80, 60-17055-9

Consists of selected abstracts in English.

HUTNIK (POLAND) 1960, [VOL. 27] NO. 3. SELECTED ABSTRACTS [Metallurgist]. [1960] [12]p. POL/39-60-0-3-(1-3)17.
Order from LC or SLA mi$2.40, ph$3.30 60-17085-3

Consists of selected abstracts in English.

METALURGIA SI CONSTRUCTIA DE MASINI (RUMANIA) 1959 [VOL. 11] SELECTED ABSTRACTS [Metallurgy and Machine Construction] [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 1, abstracts 4-5, 60-17080-1
No. 2, abstracts 11-12, 60-17080-2
No. 3, abstracts 10, 12, 60-17080-3
No. 4, abstracts 4, 6-7, 60-17080-4
No. 5, abstracts 2, 14, 60-17080-5
No. 6, 60-17080-6
No. 7, abstracts 5, 7, 51, 60-17080-7
No. 11, abstracts 6, 39, 46, 49, 60-17080-11

Consists of selected abstracts in English.

METALURGIA SI CONSTRUCTIA DE MASINI (RUMANIA) 1960 [VOL. 12] NO. 1, SELECTED ABSTRACTS [Metallurgy and Machine Construction]. [1960] [3]p. RUM/9-60-1-(4, 13)/46.
Order from LC or SLA mi$1.80, ph$1.80 60-17861-1

Consists of selected abstracts in English.

*REFERATIVNYY ZHURNAL. METALLURGIYA (USSR) 1959, NO. 9, SELECTED ABSTRACTS [Journal of Abstracts. Metallurgy]. [1960] [7]p. SOV/137-59-9-(19704-21035).
Order from LC or SLA mi$1.80, ph$1.80 60-17022-9

Consists of selected abstracts in English.

USSR ABSTRACTS OF METALLURGY; PART B, 1958, NO. 9. July 60, 265p.
Order from PP $80.00/year

Trans. of abstracts on a comprehensive range of technological subjects from Referativnyy Zhurnal, Metallurgiya (USSR) 1958, no. 9.

WIADOMOSCI HUTNICZE (POLAND) 1959, VOL. 15, SELECTED ABSTRACTS [Metallurgical News]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 1, abstracts 3, 5, 8, 60-17056-1
No. 2, abstracts 3, 5, 60-17056-2
No. 3, abstracts 4, 6, 60-17056-3
No. 4, abstracts 2-3, 60-17056-4
No. 6, abstracts 2, 4, 60-17056-6
No. 7/8, abstracts 4-6, 14-15, 60-17056-7/8
No. 9, 60-17056-9
No. 11/12, abstracts 8, 13-14, 22, 60-17056-11/12

Consists of selected abstracts in English.

Abraamov, Yu. S. and Livshits, B. G.
A STUDY OF NIMONIC BY METHODS OF INNER FRICTION, ELECTRIC RESISTANCE AND DILATOMETRIC ANALYSIS (Issledovaniye Splava Nimonik Metodany Vnutrennego Treniya, Electrosoprotivleniya i Dilatometrichekogo Analiza). 12 Feb 58, 17p. (6 figs. refs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 60-14507

Trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1957, v. 2, p. 198-210.

The electrical resistance, internal friction and volume changes associated with the transformation in nimonic (21% Co. 2.48% Ti, 0.67% Al and remainder Ni) were measured. The transformation occurred in two stages. The breakdown of the solid solution into α-and α' phases at 700° to 800°C occurred independently of the prebreakdown (K-state formation) which occurred at 500 to 600°C and was a diffusion process. The formation of the K-state was retarded by the presence of C and AL atoms.

Bogolepov, M. G., Grigorash, R. N., and Panov, A. V.
MASS SPECTROPHOTOMETRIC ANALYSIS OF GASES IN METALS. June 60, 2800 words.
Order from HB $6.70 HB-4805

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Met[allurgiya] (USSR) 1960, no. 1, p. 183-190.

Frenkel', Ya. I.
INTRODUCTION TO THE THEORY OF METALS. [1959] 6p.
Order from MDF $2.00 MDF F-120

Partial trans. (table of contents and forward) of mono. [Vvedeniye v Teoriyu Metallov] Moscow/Leningrad, 1950, 2nd ed., 381p.

Holzhey, J.
NEW RESULTS IN THE SINTERING OF IRON ORES WITH BLAST FURNACE GAS AS SUPPLEMENTARY FUEL. June 60, 4500 words.
Order from HB $9.80 HB-4831

Trans. of Neue Hütte (East Germany) 1960, v. 5, no. 3, p. 143-148.

Meshcherinova, O. N., Posysayeva, L. I., and Khasin, G. A.
METALLURGICAL FEATURES OF BORON STRUCTURAL STEELS. [1960] 13p. 4 refs. M 81.
Order from LC or SLA mi$2.40, ph$3.30 60-13617

Trans. of [Stal'] (USSR) 1958 [v. 18] no. 1, p. 75-81.

From this investigation of the properties of 126 Martin melts of various boron steels, the development of the rational melting technology with final deoxidation by aluminum and titanium was made possible. The size of the austenitic grain depends on the amount of introduced boron; the greater the amount of boron in the steel the larger the grain and the clearer the consertal. The plastic properties (especially resilience) of the steel after hardening and tempering (low and high) are lowered with an increase in the boron content. The negative influence of boron on the size of the austenitic grain, the consertal and resilience can be greatly reduced by the correct conducting of final deoxidation of steel with aluminum and titanium (with the introduction of boron by additions of ferroboron and ferroborala); by aluminum in amounts of 1 kg/t with a content in the steel of up to 0.3% C and 0.6 kg/t with a content of more than 0.3% C; with titanium in amounts of 0.06 to 0.1% depending on the composition of the steel and its purposes. The use of final deoxidation with aluminum and titanium before the addition of boron guarantees the obtainment of satisfactory hardenability, of sufficiently small and uniform austenitic grains and of high mechanical properties.

Mikheyev, M. N.
RESULTS AND OUTLOOK OF SCIENTIFIC ACTIVITIES OF THE INSTITUTE OF THE PHYSICS OF METALS. 1960, 11p.
Order from LC or SLA mi$2.40, ph$3.30 AEC tr-4081

Trans. of Akademiya Nauk SSSR. Institut Fiziki Metallov [Sverdlovsk]. Trudy, 1958, no. 20, p. 5-11.

The Institute's scientific activity has been concentrated on (1) the development of the theory of metals and alloys, and research on improvement of the properties of technical materials; and (2) the development of new physical methods for the study and control of the quality of materials and metal products. Future research will include the quantum theory of solids; the link between the structure of crystals and their physical properties; the magnetic, electrical, and other properties of metals and alloys; and the nature of the bonding forces, phase conversions, diffusion, plastic deformation, stability, and disintegration mechanism of metals and alloys.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
METAL COATINGS (1950-1960). May 60, 20p.
441 refs. OTS Selective Bibliography SB-409.
Order from OTS $0.10 OTS SB-409

A bibliography of reports listed in the two OTS monthly abstract journals: U. S. Government Research Reports and Technical Translations. Reports are arranged in sections as follows: metal coatings, general; electroplating; electropolishing; vapor deposition and vacuum deposition; phosphate coatings; plating.

Red'ko, A. N.
A METHOD FOR CORRECTING THE PARAMETERS OF BLAST FURNACE SMELTING (Metod Korrektirovaniya Parametrov Demennoy Plavki). Jan 59 [9]p.
C. T. S. no. 483.
Order from LC or SLA mi$1.80, ph$1.80 60-23075

Trans. of *Metallurg (USSR) 1957 [v. 2] no. 9, p. 3-5.

The method for adjusting ore charges is based on calculations and production indices of blast-furnace No. 2 of the Novo-tul'skii Metallurgical Works.

Vasil'yeva, G. S., Shluger, M. A., and Lipin, A. I.
THE EFFECT OF TECHNOLOGICAL FACTORS ON THE POROSITY OF THE ELECTRODEPOSITS OF NICKEL [AND] ELECTROLYTIC DEPOSITION OF COATINGS ON ALUMINUM ALLOYS. Apr 60 [32]p. (13 figs. omitted). MCL-519/III.
Order from LC or SLA mi$3.00, ph$6.30 60-19088

Trans. of mono. Zashchitno-Dekorativnyye i Spetsiyal'nyye Pokrytiya Metallov (Protective-Decorative and Special Coatings of Metals) Kiev/Moscow, 1959, p 55-61 and 95-107.

Volkert, Georg.
A STUDY OF THE METALLURGY OF ZIRCONIUM ALLOYS, tr. by R. V. Herrigan. 30 July 53 [13]p. (1 fig. omitted) 7 refs.
Order from SLA mi$2.40, ph$3.30 60-16787

Trans. of Metall und Erz (Germany) 1943, v. 40, [no. 17/18] p. 246-252.

The important literature dealing with the preparation of Zr alloys was examined, and 14 additional experiments dealing with the preparation of Zr alloys are described. In 4 experiments carbon was studied as the reducing agent; in 10 experiments reduction with Si was undertaken. In several experiments the use of a Ca rich slag resulted in large amounts of Ca metal in the alloy. The last 2 experiments were conducted in magnesia crucibles to lower the carbon content of the alloy. On the basis of these experiments, the feasibility of producing an alloy of up to 50% Zr content has been demonstrated. (Author)

Ferrous Metals

Braun, M. P.
EFFECT OF ADDITIONAL ALLOYING ELEMENTS UPON STEEL PROPERTIES. June 60, 1000 words.
Order from HB $2.80 HB-4869

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Met[allurgiya] (USSR) 1960, no. 4, p. 190-193.

Dahl, W. and Lueg, W.
INVESTIGATIONS ON THE EFFECT OF THE ROLLING CONDITIONS ON THE PROPERTIES OF HOT ROLLED LOW CARBON STEEL STRIP. I. STRUCTURE OF THE SCALE AND BEHAVIOUR IN PICKLING. [1960].
Order from BISI 6 10s BISITS 1681

Trans. of Stahl u[nd] Eisen (West Germany) 1957, [v. 78] 20 Mar, p. 368-377 (also in C[entre de] D[ocumentation] S[iderurgique]. Circ[ulaire] d'Inform[ations] Tech[niques] (France) 1958, no. 8, p. 1601-1622.

Dobrokhotov, N. N.
THEORY AND PRACTICE OF DEOXIDATION OF STEEL. June 60, 2000 words.
Order from HB $4.80 HB-4855

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Met[allurgiya] (USSR) 1959, no. 10, p. 23-28.

Fedotenko, N. S.
DETECTION OF SLATY FRACTURE IN TOOL STEEL. June 60, 300 words.
Order from HB $2.00 HB-4694

Trans. of Zavodskaya Laboratoriya (USSR) 1956, v. 22, no. 7, p. 855-856.

Gerchikov, D. S.
REDUCTION OF CONTAMINATION IN RIMMED STEELS BY NON-METALLIC INCLUSIONS (Umen'sheniye Zagryazennosti Kipyashchey Stali Nemetallicheskimi Vklyucheniyami. Jan 59 [4]p. C.T.S. no. 609.
Order from LC or SLA mi$1.80, ph$1.80 60-23084

Trans. of *Metallurg (USSR) 1957 [v. 2] no. 6, p. 15-17.

Investigations carried out at the Stalinskii Metallurgical Plant with radioactive isotopes, established the following main causes of the contamination of ingots of rimming steels, by non-metallic inclusions, resulting in rejects because of flakes and blow-holes: (1) foaming slags (froth) which originate from the floating products of decomposition of refractories and from the reduction of steel by manganese (MnO) retained by the effervescing metal in the moulds; (2) manganous oxide not floating with the foaming slag, and (3) products of decomposition of refractories caught up between the regions of growing crystals. These facts point the way towards elaborating measures for combating the defects.

Gerlach, R.
THE RENN-PROCESS IN COMPARISON WITH OTHER MINERAL DRESSING AND METALLURGICAL PROCESSES. [1960] [9]p. 14 refs.
Order from SLA mi$1.80, ph$1.80 60-16792

Abridged trans. of Technische Mitteilungen Krupp (West Germany) 1958, v. 16, no. 2 [p. 27-33].

Henkel, S. and Serbent, H.
EXPERIMENTAL RESULTS IN PRODUCTION OF SPONGE IRON IN THE RENN-KILN. [1960] [14]p.
Order from SLA mi$2.40, ph$3.30 60-16790

Trans. of Technische Mitteilungen Krupp (West Germany) 1958, v. 16, no. 2 [p. 41-46].

The semi-commercial Krupp-Renn processing of Watenstedt concentrate, Goa, Waldhausen, Quenza, Damme, and Laryamna ores is described. These ores vary widely in the amount and composition of gangue. The composition of the off gases leaving the kiln at about 400°C, and the degree of reduction of the slags are highly dependent upon temperature. Except for the Watenstedt concentrate, the reduction begins at about 900°C and becomes very rapid above 1050°C. An 80 to 85% reduction is obtained at 1100°C. The highest values are about 95%. The reduced iron appears as finely divided 5- to 30-micron sponge aggregates embedded in the gangue.

Skoblo, S. Ya.
METHOD OF STUDYING THE CHEMICAL HETEROGENEITY OF STEEL INGOTS. June 60, 900 words.
Order from HB $2.80 HB-4835

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Met[allurgiya] (USSR) 1959, no. 10, p. 191-193.

Wahlster, M. and Schmidt, C. B.
EXPERIMENTS IN DESULFURIZATION OF RENN-LUPPEN AND THEIR SUBSEQUENT TREATMENT IN AN ELECTRIC FURNACE. [1960] [7]p. 9 refs. M. R. 83.
Order from SLA mi$1.80, ph$1.80 60-16786

Trans. of Technische Mitteilungen Krupp (West Germany) 1958, v. 16, no. 2 [p. 39-40].

Desulfurization of Renn-luppen occurs within a few hours at temperatures between 850 and 1050° C when coal and lime are added to the finely divided product. The technique is feasible on a continuous basis.

Wentrup, Hanns, Maetz, Helmut, and Heller, Paul.
THE REACTION OF TITANIUM OXIDE-CONTAINING LIME SILICATE SLAGS WITH CARBON-CONTAINING IRON AS A BASIS FOR THE SMELTING OF TITANIUM-CONTAINING IRON ORES, tr. by Carl Derrick. Treatise no. 4g1 from Experimental Station of the Fried, Krupp Co., Essen and Max Planck Inst. for Iron Research. [1960] 29p. (25 figs. omitted) 16 refs.
Order from SLA mi$2.70, ph$4.80 60-16761

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1949 [v. 20] no. 3/4, p. 139-150.

Willmer, Th.-K. and Liedke, W.
EXPERIENCE WITH DIRECT RECORDING SPECTROGRAPHS IN A STEEL COMPANY LABORATORY.
June 60, 1900 words.
Order from HB $3.80 HB-4793

Trans. of Archiv [für das] Eisenh[üttenwesen] (West Germany) 1959, v. 30, no. 12, p. 713-714.

Light Metals

Belyayev, A. I. and Firsonova, L. A.
THE REFINING OF ALUMINUM BY DISTILLATION IN THE FORM OF SUBHALIDE COMPOUNDS, tr. by E. Bishop. [1959] [13]p. 5 refs. Trans. no. 123; M.800.
Order from LC or SLA mi$2.40, ph$3.30 60-13639

Trans. of Izvestiya Vysshikh Uchebnikh Zavedeniy. Tsvetnaya Metallurgiya (USSR) 1958, no. 1, p. 116-120.

The behavior of Cu, Si, Fe, Ti, Mn, Zn, Ca, and Mg in the subfluoride distillation of aluminum was studied. Substantial amounts of Si and Fe can be present in the initial aluminum with going over into the refined product. Cu, Ti, and Mn impurities are readily transferred, and admixtures of Mg, Zn, and Ca must be kept as low as possible. As the purity of the initial material is increased there is a corresponding increase in that of the end product, from 99.8% Al for the distillation of silico-aluminum, to 99.999% Al for primary aluminum. Repeated distillation of the condensate ($Al + AlFe_3$) raises the purity of the refined aluminum.

Friedel, J., Boulanger, C., and Crussard, C.
ELASTIC MODULUS AND INTERNAL FRICTION OF POLYGONIZED ALUMINUM (Constantes Elastiques et Frottement Interieur de l'Aluminium Polygonise) tr. by Marguerite C. Layton. [1960] 24p. (10 figs. omitted) 28 refs. H 4312.
Order from OTS $0.75 60-21002

Trans. of Acta Metallurgica (U. S.) 1955, v. 3, July, p. 380-391.

In polygonized coarse-grain aluminum, one can observe at elevated temperatures a strong drop of Young's modulus, while the internal friction reaches high values. The drop of modulus is attributed to displacements of the dislocation walls of the polygonized structure. The fact that it spreads over a large temperature interval, as well as the complex activation energy of the phenomenon, seems to prove that the drop is due to the joint contribution of several relaxation mechanisms: probably microcreep and climb of dislocations. According to this explanation, the energy of defect formation on dislocations should be about 0.7 to 1 ev, in aluminum. (Author)

Ogurtsov, S. V.
SCIENTIFIC CONFERENCE ON THE METALLURGY, CHEMISTRY, AND ELECTROCHEMISTRY OF TITANIUM. 18 July 60, 2p. JPRS: 5035.
Order from OTS $0.50 60-11939

Trans. of Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1960, no. 2, p. 167-168.

Titles (and authors) are given of reports that were presented at the All-Union Conference held at Moscow on 14 to 20 January 1960.

Nonferrous (except light) Metals

*TSVETNYYE METALLY (USSR) 1960 [V. 33] (Nonferrous Metals). [1960]
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

No. 1, p. 1-88, abstracts 1-21, PB 141 139T-25
No. 2, p. 1-87, abstracts 1-22, PB 141 139T-24

Consists of abstracts in English.

Friedel, J.
ON THE STRUCTURE OF THE HEAVY METALS. [1959] 23p. 23 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3808

Trans. of [Commissariat à l'Energie Atomique]. Rapport (France) 1958, no. 766.

An analysis of literature data indicates that three zones (A, B, and C) may be distinguished in the heavy metal series. A comprises almost normal transition metals, with a band (or system of bands) most of 6d character, and becoming narrow from thorium on. B includes transition metals having homopolar bonds, with a system of narrow bonds of 6d5f hybrid character. C is rare earth metals, with independent (?) 5f shells.

Golubtsova, R. B. and Mashkovich, L. A.
INVESTIGATION OF METALLIC COMPOUNDS IN MULTICOMPONENT NICKEL ALLOYS WITH A VARIABLE TITANIUM CARBIDE CONTENT. [1960] 8p. (4 figs. omitted) 10 refs. M1250.
Order from LC or SLA mi$1.80, ph$1.80 60-15777

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 6, p. 971-974.

A Ni-base alloy, containing Cr, Mo, W, Nb, and Al, showed no excess phase separation upon anodic dissolution when 0.1% TiC was present. In alloys with 1.0, 4.0, and 7.5% TiC, a γ-Ni solid solution and a complex carbide phase, Ti(Nb, W, Mo, Cr)C, were separated. X-ray analysis showed that the carbide phase had a cubic face-centered lattice, corresponding to the TiC lattice, with the lattice parameter of 4.38 to 4.33 kX(xic: Siegbahn units?) dependent on the NbC and TiC content.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
COLUMBIUM AND TANTALUM. June 60, 14p. 237 refs. OTS Selective Bibliography SB-414.
Order from OTS $0.10 OTS SB-414

A bibliography of reports listed in the two OTS monthly abstract journals: U. S. Government Research Reports and Technical Translations. Reports listed cover columbium and tantalum metals and alloys; carbides and compounds.

Yemel'yanov, V. S., Yevstyukhin, A. I. and others.
AN IMPROVED METHOD OF PREPARING IODIDE CHROMIUM AND ITS PROPERTIES. Pt. 2 of Production and Physical Metallurgy of Pure Metals. 5 July 60, 23p. 6 refs. JPRS: 2950.
Order from OTS $0.75 60-11840

Trans. of Metallurgiya i Metallovedeniye Chistykh Metallov (USSR) 1959, no. 1, p. 44-62.

A laboratory installation for iodide refining of chromium was designed and tested. The installation is able to prepare, during one cycle lasting 15 to 20 hr, crystalline rods of iodide chromium weighing 100 to 140 g. During the process the temperature of the flask must be maintained within the range of 800 to 850°C, and the temperature of the filament within the range of 1100 to 1150°C. One cycle of iodide refining removes 29/30, of the oxygen content while all but 10 to 12% of the nitrogen and hydrogen is removed. The purity of iodide chromium so obtained was confirmed by metallographic analysis of monocrystals and of the metal remelted in an arc furnace. A study of the mechanical properties of samples of iodide chromium prepared and remelted in an arc furnace showed that the cast metal has a threshold of cold brittleness at about -25°C. The micro furnace of iodide chromium monocrystals changed from 95 to 100 kg/mm^2 (at a load of 20 g). The hardness of this iodide chromium varied within 100 to 120 H_B; the yield point at room temperature varies from 13 to 20.5 kg/mm^2; the tensile strength was 19.5 to 28.2 kg/mm^2, the elongation 8.8 to 16.6%, and the reduction of area 9.4 to 22.9%. Monocrystals of chromium iodide and the metal remelted in an arc furnace were body-centered cubic with parameter "a" at room temperature equal to 2.8790 ± 0.001 kX. Crystals of hexagonal chromium were evidently chromium hydrides or possibly another compound of this metal. (Author) (See also 60-11806)

Zaynullin, G. G.
SOME LAWS OF DISTRIBUTION OF SELENIUM AND TELLURIUM IN COPPER-NICKEL ORES IN THE NORILSK DISTRICT DEPOSIT (O Nekotorykh Zakonomernostiyakh Raspredeleniya Selena i Tellura v Medno-Nikelevykh Rudakh Mestorozhdeniya Noril'skogo Rayona). [1960] [11]p.
Order from LC or SLA mi$2.40, ph$3.30 60-19866

Trans. of Akademiya Nauk SSSR. Institut Mineralogii, Geokhimii i Kristallokhimii Redkhikh Elementov. Trudy, 1959, no. 2, p. 74-77.

Structural Metallurgy and Corrosion

Engell, H.-J.
ELECTROCHEMICAL INVESTIGATION OF THE CORROSION OF α-IRON SINGLE CRYSTALS IN DILUTE ACIDS. [1960] 22p.
Order from ATS $34.95 ATS-80M41G

Trans. of Arch[iv für das] Eisenhüttenw[esen] (West Germany) 1955, v. 26, no. 7, p. 393-404.

Samsonov, G. V., Sinelnikova, V. S., and Kisly, P. S.
"ALLOYS" OF THE BORON CARBIDE-MOLYBDENUM DISILICIDE SYSTEM. [1960] 3p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC tr-4077

Trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1959, no. 8, p. 866-868.

The phase changes with increasing $MoSi_2$ were investigated.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

NUKLEONIKA (POLAND) 1959, VOL. 4, SELECTED ABSTRACTS [Nucleonics]. [1960]
Order from LC or SLA mi$1.80, ph$1.80

No. 1, abstracts 7-9, 60-17058-1
No. 2, abstracts 1, 9-10, 60-17058-2
No. 4, abstracts 1, 11-13, 60-17058-4

Consists of selected abstracts in English.

Shvanev, V.
CREATORS OF THE PROTON SYNCHROTON (Sozdateli Sinkhrofazotrona). May 60 [6]p. (2 illus. omitted) MCL-195/III.
Order from LC or SLA mi$1.80, ph$1.80 60-19048

Trans. from Trud, Moscow (USSR) 1959, v. 39, no. 94(11654) p. 3.

A newspaper encomium.

Elementary Particles

Belyakov, V. A., Kozlova, L. G. and others.
THE RELATION BETWEEN THE SPEED OF NUCLEAR EMULSIONS AND THE TEMPERATURE WITHIN THE RANGE OF 2-300°K. [1960] 4p. 4 refs. T-3181.
Order from LC or SLA mi$1.80, ph$1.80 60-16539

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1959, v. 4, no. 6, p. 427-429.

Data are tabulated which were taken from experiments with emulsions provided by NIKFI (Kino-Foto Scientific Research Institute) and Ilford emulsions, G-5 600 μ.

Brezhnev, B. G.
MEASUREMENT OF THE ENERGY OF FAST IONS IN A POWERFUL PULSED DISCHARGE. 20 July 60, 8p. 8 refs. JPRS: 3571.
Order from OTS $0.50 60-31414

Trans. of Akademiya Nauk SSSR. [Otdeleniye Tekhnicheskikh Nauk]. Izvestiya: Energetika i Avtomatika, 1960, no. 2, p. 54-58.

The parabola method of J. J. Thomson (Phil. Mag. 21: 225, 1911) was used to analyze beams of fast ions. Results showed that the fast ions in the plasma produced by a powerful pulsed discharge in deuterium and hydrogen had a continuous spectrum with velocities ranging from 4 to 200 Kev. (The emulsion in the photographic plates was not sensitive enough to register ions with energies below 4 Kev.) Maximum energies of deuterons were more frequently obtained between 80 to 170 Kev than in the 170- to 200-Kev range. The formation of fast negative ions is probably connected with the appearance of fast neutral particles with subsequent capture of electrons. The presence of deuterons with energies five times those of the discharge voltage indicates the appearance of accelerating processes in the discharge. Experiments with a change in the fast ions passing through the anode showed that fast ions appear only during the first half period of the discharge current and that the direction of the fields in which the ions are accelerated to great energies coincides with the field of the initial discharge voltage. Neutron radiation during discharge in deuterium, at low pressure in straight tubes, is caused chiefly by accelerating processes in the plasma filament which accelerate deutrons up to 200 Kev.

Filippenko, L. G.
ANALYSIS OF SYSTEMATIC ERRORS DURING THE INVESTIGATION OF SCATTERING AT SMALL ANGLES. [1960] 8p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-16591

Trans. of *Zhurnal Tekhnicheskoy Fiziki (USSR) 1960, v. 30, no. 1, p. 57-62.

Systematic errors occurring during the calculation of differential sections of scattering appear to be in connection with the final resolving power of the apparatus, and in the initial divergence of the primary beam of particles. Methods for calculating these errors are given.

Kartuzhanskiy, A. L.
KINETICS OF DEVELOPMENT OF AN INDIVIDUAL IONIZING PARTICLE TRACK IN PHOTOGRAPHIC EMULSIONS. I. DIFFERENCES IN THE KINETICS OF DEVELOPMENT RESULTING FROM DIFFERENCES IN THE SIZE OF THE DEVELOPMENT CENTERS, tr. by Carlo A. Bauman. [1960] 10p. T-3179.
Order from LC or SLA mi$1.80, ph$1.80 60-16746

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1959, v. 4, no. 6, p. 417-422.

The kinetics of development of particle tracks with various ionizing power on emulsions of various speeds have been investigated. The kinetics were very nearly identical to the kinetics of development of a uniform density, formed by particles. When the ionizing power of the particle and the emulsion speed are reduced, the development is extended because the size of the centers of the latent image formed is decreased. A change in the size of centers by several ($\lesssim 5$) atoms of Ag can produce important changes in the development kinetics. The minimum size of the development center, n_0, has been determined for all emulsions investigated (on the basis of the failure of the reciprocity law) for various development times. A linear dependence of $1/n_0$ upon the development time was confirmed. The number, n, of secondary electrons formed by the particle when it passed through a silver halide grain in various emulsions was compared with the number of Ag atoms in the development center, n_0, for the same conditions of development. This comparison made it possible to estimate the number of such centers in the grain, losses of secondary electrons during the formation of the latent image, as well as the dependence of these losses upon the emulsion speed. (See also 59-15028)

Nuclear Engineering and Power

Ch'ien, San-ch'iang.
DEVELOPMENT OF NUCLEAR RESEARCH IN THE CHINESE PEOPLE'S REPUBLIC. 21 July 60, 6p. JPRS: 3601.
Order from OTS $0.50 60-31438

Trans. from Akademiya Nauk SSSR. Vestnik, 1960 [v. 30] no. 4.

Englander, Marcel.
A CONTRIBUTION TO THE STUDY OF NUCLEAR FUELS DERIVED FROM METALLIC URANIUM (Contribution à l'Étude des Matériaux Combustibles Nucléaires a Base d'Uranium Métallique). June 59, 102p.
Order from OTS $2.50 AEC-tr-3660

Trans. of Commissariat a l'Energie Atomique. Rapport (France) 1958, no. 776.

In a study of the conditions for improving the physico-metallurgical properties of uranium under conditions of large-scale production (several hundred tons), it was found that the different allotropic structures of metallic uranium and their reciprocal transformation mechanisms closely condition the behavior of its alloys under thermal fatigue and under irradiation. In pure uranium, neither the orthorhombic or tetragonal anisotropic structure nor their transition mechanism by shearing can be avoided; any amelioration of the intrinsic technological properties by mechanical or thermal treatments can be only transitory. Dissolving a third metallic element (e.g., Al, Si, Cr, Mo, Zr, or Nb) in solid solution makes it possible to alter the nature of the mechanism of

the allotropic transformations and to retain the isotropic beta phase or gamma phase at ordinary temperatures, depending on the permissible concentrations of third elements. For alloys with 0.2 to 0.5 wt-% of dissolved aluminum, molybdenum, chromium or tin, the beta phase was retained in the metastable state, down to ordinary temperature, but this phase did not have adequate mechanical properties. For alloys with minimum concentrations, between 0.5 and 2 wt-% of aluminum, molybdenum, zirconium or niobium, quenching the gamma phase kept only a very little of the beta phase in the metastable state. Above 4 wt-% of molybdenum, uranium alloys had no regions of stability of the beta phase. It was possible, by quenching the gamma phase, to retain this isotropic phase completely in the metastable state, which decomposed more slowly the higher the molybdenum concentration and the more the temperature differed from 500°C.

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

Kedrov, L. V.
ON CALCULATING THE THERMAL PROPERTIES OF FOOTWEAR (O Raschetye Teplovyikh Svoystv Obuvi) tr. by D. L. Kassell. [1960] [9]p. 4 refs. H - 6279.
Order from LC or SLA mi$1.80, ph$1.80 60-19862

Trans. of Legkaya Promyshlennost' (USSR) 1957 [v. 17] no. 10, p. 14-17.

The dependence of the magnitude of the total thermal resistance of footwear on the thermal properties of the top and bottom of shoes and boots is discussed. Some results are presented of tests made on boots with lining of calf skin, coarse calico, ticking serge, and baize.

PHYSICS

ACTA PHYSICA POLANICA 1959, VOL. 18 [Transactions in Physics of the Polish Academy of Sciences]. [1960]
Order from LC or SLA

No. 4, p. 271-389, abstracts 1-8, mi$2.40, ph$3.30, 60-17074-4
No. 6, p. 537-592, abstracts 1-5, mi$1.80, ph$1.80, 60-17074-6

Consists of abstracts in English.

ACTA PHYSICA POLONICA, 1960, VOL. 19, NO. 1, SELECTED ABSTRACTS [Transactions in Physics of the Polish Academy of Sciences]. [1960] [7]p.
POL/45-60-19-1-(1-2, 4-8)/8.
Order from LC or SLA mi$1.80, ph$1.80 60-17858-1

Consists of selected abstracts in English.

AKADEMIYA NAUK UZBEKSKOY SSR [TASHKENT]. IZVESTIYA. SERIYA FIZIKO-MATEMATICHESKIKH NAUK, 1960, NO. 1, P. 3-84 [News of the Academy of Sciences of the Uzbek SSR. Physico-mathematical Sciences Series]. [1960] [10]p. SOV/166-60-0-1-(1-11)/11.
Order from LC or SLA mi$1.80, ph$1.80 60-17856-1

Consists of abstracts in English.

APPLIED MAGNETIC HYDRODYNAMICS (Prikladnaya Magnitogidrodinamika). Nov 59 [140]p. 85 refs. F-TS-9981/V.
Order from LC or SLA mi$6.90, ph$21.30 60-19148

Trans. of Akademiya Nauk Latviyskoy SSR, Riga. Institut Fiziki. Trudy, 1956 [v. 8].
Another translations is available from OTS $2.75 as 59-21064, AEC-tr-3602, Apr 59, 124p.

Contents:
About the modeling of magneto-hydrodynamic phenomena in liquid metals, by I. M. Kirko
Electromagnetc pumps for liquid metals: a brief review based on published material, by I. A. Tutin and E. K. Yankop
Introduction to the theory of induction pumps, by I. A. Tutin
Velocity distribution and magneto-hydraulic pressure losses in a rectangular duct, by Yu. A. Birzvalk and I. A. Tutin
Electromagnetic phenomena in induction pumps for liquid metal, by I. A. Tutin and E. K. Yankop
[Contribution] to the problem of edge effects in linear induction pumps, by L. Ya. Ul'manis
Method of design of induction pumps for liquid metal, by Ya. Ya. Leilpeter and I. A. Tutin
Single-phase pumps: ac Faraday type, by E. K. Yankop
The problem of a conducting sphere in a traveling magnetic field, by Yu. K. Krumin

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. PHYSICAL SERIES, 1959, VOL. 23, NO. 6, P. 663-776. Transactions of the All-Union Conference on Electron Microscopy (no. 2) con't. 1960, 1v.
Order from CTT $20.00, $215.00/year

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1959, v. 23, no. 6, p. 670-[777].

Consists of articles by G. O. Bagdyk'yants, R. Ya. Berlaga, G. V. Der-Shvarts, Ye. M. Dubinina, D. V. Fetisov, P. P. Kas'yankov, A. I. Krokhina, A. S. Lykin, L. N. Malakhov, A. A. Petrova, N. M. Popov, A. M. Reshetnikov, I. S. Sbitnikova, Yu. I. Smolin, A. M. Solov'yev, G. V. Spivak, L G. Stoyanova, A. M. Strashkevich, A. A. Trapeznikov, N. V. Vertsner, D. P. Vinogradov, Yu. V. Vorob'yev, V. Ye. Yurasova.

CESKOSLOVENSKY CASOPIS PRO FYSIKU (CZECHOSLOVAKIA) 1959 [VOL. 9] NO. 4. SELECTED ABSTRACTS [Czechoslovak Journal of Physics]. [1960] [16]p. CZECH/37-59-4-(1-8, 10-11, 14)/16.
Order from LC or SLA mi$2.40, ph$3.30 60-17025-4

CESKOSLOVENSKY CASOPIS PRO FYSIKU (CZECHOSLOVAKIA) 1959 [VOL. 9] NO. 2. SELECTED ABSTRACTS [Czechoslovak Journal of Physics]. [1960] [23]p. CZECH/37-59-2-(1-18)/20.
Order from LC or SLA mi$2.70, ph$4.80 60-17025-2

Consists of selected abstracts in English.

CESKOSLOVENSKY CASOPIS PRO FYSIKU (CZECHOSLOVAKIA) 1959 [VOL. 9] NO. 6, SELECTED ABSTRACTS [Czechoslovak Journal of Physics]. [1960] [10]p. CZECH/37-59-6(1-5, 12, 14)/25.
Order from LC or SLA mi$1.80, ph$1.80 60-17025-6

Consists of abstracts in English.

CESKOSLOVENSKY CASOPIS PRO FYSIKU (CZECHOSLOVAKIA) 1959 [VOL. 9] NO. 1, SELECTED ABSTRACTS [Czechoslovak Journal of Physics] [1960] [24]p. CZECH/37-59-1-(2-3, 5-14, 16-24)/26.
Order from LC or SLA mi$2.70, ph$4.80 60-17025-1

Consists of selected abstracts in English.

CESKOSLOVENSKY CASOPIS PRO FYSIKU (CZECHOSLOVAKIA) 1959 [VOL. 9] NO. 3, SELECTED ABSTRACTS [Czechoslovak Journal of Physics]. [1960] [33]p. CZECH/37-59-3-(1-12, 14-25)/29.
Order from LC or SLA mi$3.00, ph$6.30 60-17025-3

Consists of selected abstracts in English.

FIZIKAI SZEMLE (HUNGARY) 1959, [VOL. 9] NO. 10. SELECTED ABSTRACTS [Review of Physics]. [1960] [4]p. HUN/16-59-10-(1-2, 5)/7.
Order from LC or SLA mi$1.80, ph$1.80 60-17092-10

Consists of selected abstracts in English.

FIZIKA V SHKOLE (USSR) 1960, NO. 2, SELECTED ABSTRACTS [Physics in School]. [1960] [1]p. SOV/47-60-2-(7, 44-45)/52.
Order from LC or SLA mi$1.80, ph$1.80 60-17836-2

Consists of selected abstracts in English.

FORTSCHRITTE DER PHYSIK (GERMANY) 1959, . VOL. 7, NO. 12. SELECTED ABSTRACTS [Progress in Physics]. [1960] [3]p. GER/17-7-12-(1-2)/2.
Order from LC or SLA mi$1.80, ph$1.80 60-17091-12

Consists of selected abstracts in English.

JEMNA MECHANIKA A OPTIKA (CZECHOSLOVAKIA) 1959, NO. 9, SELECTED ABSTRACTS [Precision Mechanics and Optics]. [1960] [3]p. CZ/30-59-9-(4-5, 9)/20.
Order from LC or SLA mi$1.80, ph$1.80 60-17817-9

Consists of selected abstracts in English.

K'O HSUEH HSIN WEN (CHINESE PEOPLE'S REPUBLIC) 1959, NO. 29. SELECTED ABSTRACT [Science News]. [1960] [1]p. CHICOM/32-59-29-4/13
Order from LC or SLA mi$1.80, ph$1.80 60-17096-29

Consists of selected abstract in English.

NAUCHNYYE DOKLADY VYSSHEY SHKOLY. FIZIKO-MATEMATICHESKIYE NAUKI (USSR) 1959, NO. 1, SELECTED ABSTRACTS [Scientific Reports of Higher Schools. Physico-mathematical Sciences]. [1960] [30]p. SOV/155-59-1-(1-12, 15-30)/30.
Order from LC or SLA mi$2.70, ph$4.80 60-17863-1

Consists of selected abstracts in English.

REFERATIVNYY ZHURNAL. FIZIKA (USSR) 1959, NO. 7, SELECTED ABSTRACTS [Journal of Abstracts. Physics]. [1960] [60]p. SOV/58-59-7-(14-604-16739).
Order from LC or SLA mi$3.60, ph$9.30 60-17011-7

Consists of selected abstracts in English.

Furman, K. S., Butusov, T. V., and Utyamyshev, R. I.
BASIC PROBLEMS WHICH ARE TO BE SOLVED AT DESIGNING AUTOMATICALLY COMPENSATING RADIOACTIVE METERS FOR DETERMINING DENSITY OF FLUIDS; INCREASING SENSITIVITY OF AUTOMATIC ELECTRONIC POTENTIOMETERS [AND] THE ACCURATE DEVICE FOR MEASURING ANGULAR VELOCITIES OF MICRO-MOTORS (Osnovnyye Voprosy Proyektirovaniya Avtokompensatsionnykh Radioaktivnykh Plotnomerov Zhidkosti; Povysheniye Chuvstvitel'nosti Avtomaticheskikh Elektronnykh Potentsiometrov [and] Tochnyy Pribor Dlya Izmereniya Uglovoy Skorosti Mikrodvigateley) tr. by W. H. [1960] [17]p. (8 figs. omitted) 6 refs. H 3552 A, B, and C.
Order from OTS $0.50 60-21722

Trans. of Priborostroyeniye (USSR) 1958, no. 5, p. 22-26 and 30-31.

Radioactive densimeters: Soviet devices (PZhR-1, PZhR-3, and PZhR-2) are described, which measure the decrease in the intensity of a gamma source after it passes through the fluid. Automatic electronic potentiometers: An automatic micro-voltmeter, the EPP-11 (now in production), is described, which has a sensitivity of 5×10^{-8}v. The total noise voltage, reduced to the amplifier input, is 6.1×10^{-8}v.

Angular-velocity measuring device: This device operates as a heterodyne tachometer, which measures the difference between two alternating currents within a narrow domain.

Nomoto, O.
CLASSIFICATION OF THE OPTICAL METHODS OF VISUALIZATION OF ULTRASONIC WAVES. II. MECHANISMS OF IMAGE FORMATION AND CHARACTERISTICS OF THE IMAGES. [1960] 14p.
Order from ATS $19.85 ATS-17M41J

Trans. of Nihon Onkyo Gakkaishi (Japan) 1958, v. 14, no. 4, p. 291-299.
Another translation is available from SLA mi$2.70, ph$4.80 as 60-14110, Dec 59, 26p.

Electricity and Magnetism

Bazhanova, N. V.
HALL EFFECT IN IRON-NICKEL ALLOYS NEAR THE CURIE TEMPERATURE. [1960] 5p. 6 refs.
Order from MDF $3.00 MDF B-154

Trans. of *Fiz[ika] Met[allov] i Metall[ovedeniye] (USSR) 1959, v. 8, no. 3, p. 342-345.

Ben'kova, N. P.
MAGNETIC STORMS AND SYSTEMS OF ELECTRIC CURRENTS (Magnitnyye Buri i Sistemy Elektricheskikh Tokov). [1960] [262]p. 65 refs.
F-TS-8974/V.
Order from LC or SLA mi$11.10, ph$31.10 60-23227

Trans. of Nauchno-Issledovatel'skiy Institut Zemnogo Magnetizma [Ionosfery i Rasprostraneniya Radiovoln]. Trudy (USSR) 1953, v. 10(20), 159p.

A study is presented of the morphology of magnetic storms and of the disturbed ionosphere, and practical methods are developed for calculating the electric currents from the observed distribution of the magnetic field.

Felici, Nöel-J.
CONSTANT ELECTRIC FIELD SURFACES (Les Surfaces à Champ Électrique Constant). 1960 [66]p. 12 refs. NRL Trans. no. 798.
Order from OTS $1.75 60-21715

Trans. of Revue Générale de l'Électricité (France) 1950, v. 59, no. 11, p. 479-501.

The difficulties encountered in trying to obtain a constant electric field on surfaces under tension in electrical high-tension equipment bring about the selection of surfaces between which the field intensity must become less than certain values, which leads to designs with excessively large dimensions. Kirchhoff's method is applied to the problems of the electric field. This new method, called the hodographic method, is presented in detail, and is then applied to the solution of various problems of electric field distribution in order to show its wide applicability. The proposed method deals with a plane electric field bounded by constant field curves and straight lines, and thus brings back the problem under consideration to a simple integration with respect to a complex variable. This integration in most cases leads to elementary or elliptic functions by means of simple numerical calculations. The eight examples taken up are followed by considerations on the possibilities of applying the method to periodic problems and to multiply connected surfaces as well as to problems in space.

Electronics

Gratreau, Pierre.
STUDY OF RELATIVISTIC BEAMS. RELATIVISTIC GENERALIZATION OF PIERCE'S EQUATION. [1959] 3p. 1 ref. PG.2.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3675

Trans. of Commissariat a l'Energie Atomique (France) no. PG. 2, 19 July 57.

We propose to establish the general equation for the electronic trajectories of a beam of revolution submitted to electric and magnetic fields defined on the axis. We place ourselves in Gauss's approximation: central rays slightly inclined on the axis. We take into account the space charge and are placed in the relativistic range. (Author)

Pokrovskiy, V. R., Ulinich, F. R., and Savvinykh, S. K.
ON THE THEORY OF TAPERED WAVEGUIDES (K Teorii Volnovodov Peremenogo Secheniya) tr. by R. G. Merrill. 10 Feb 60 [13]p. 4 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-17491

Trans. of *[Radiotekhnika i Elektronika] (USSR) 1959, v. 4, no. 2, p. 161-171.
Another translation is available from OTS $1.00 in 59-13887, JPRS(NY)-1898, 15 Oct 59, 37p.

The propagation of electromagnetic waves in a plane waveguide with a finite, slowly varying cross section is examined by a method which combines perturbation theory with the WKB method. The effect of reflection and scattering of waves is calculated with an accuracy to an arbitrary power of β, a small parameter dependent upon the parameter α in the function $y = \pm f(\alpha z)$. It is shown that reflection and scattering essentially depend on the smoothness of the waveguide coupling, and phase variation depends on the waveguide form. Coefficients of reflection and scattering are found in terms of the minimum order of β. (See also 59-16711)

Molecular Physics and Spectroscopy

Brandmüller, J.
RECENT ASPECTS OF THE ANALYTICAL APPLICATION OF THE RAMAN EFFECT. [1960] 11p.
Order from ATS $15.50 ATS-40M41G

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1959, v. 170, no. 1, p. 29-43.

Kupriyanov, S. Ye., Dzhagatspanyan, R. V. and other.
MASS-SPECTROMETRIC METHOD OF ANALYSIS OF CHLORO DERIVATIVES OF METHANE. [1960] 8p.
Order from ATS $12.00 ATS-09M40R

Trans. of Zavodskaya Lab[oratoriya] (USSR) 1955, v. 21, no. 10, p. 1182-1188.

Piskunov, A. K., Shigorin, D. N. and others.
ELECTRON PARAMAGNETIC RESONANCE SPECTRA OF SOME INNER COMPLEX COMPOUNDS OF COPPER. [1960] 4p.
Order from ATS $6.75 ATS-36M41R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 130, no. 6, p. 1284-1287.

Stammreich, H. and Forneris, Roberto.
THE RAMAN SPECTRUM OF p-BENZOQUINONE (das Raman-Spektrum des p-Benzochinchons) tr. by W. H. Everhardy. 18 Nov 59, 12p. (1 fig. omitted) 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-22718

Trans. of Z[eitschrift für] Naturforschung (West Germany) 1952, v. 7a, p. 756-759.

Optics

Tartakovskiy, L. B.
THE THEORY OF THE DOUBLE CURVATURE REFLECTOR. [1960] 12p.
Order from ATS $14.90 ATS-26M41R

Trans. of *Radiotekh[nika] i Elektron[ika] (USSR) 1959, v. 4, no. 11, p. 1821-1830.

Toropova, T. P.
ON THE QUESTION OF THE ROLE OF VARIOUS FACTORS IN THE ATTENUATION OF THE LIGHT OF THE EARTH'S ATMOSPHERE (K Voprosu o Roli Razlichnykh Faktorov v Oslablenii Sveba Zemnoy Atmosferoy) tr. by E. C. B. P. [1960] 118p. (28 figs. omitted) 49 refs. H 3121.
Order from OTS $2.50 60-21744

Trans. of [Akademiya Nauk] Kazakh[skoy] SSR, Alma-Ata. Astrofizicheskiy Institut. Izvestiya, 1958, v. 6, p. 3-72.

Results are presented of 36 days of observation during 1952 and 1954 of the spectral transparency of the atmosphere in the 410- to 1010-mμ region. Ordinary equipment was used. A seasonal course of water vapor content was computed for the entire atmospheric thickness and compared with the course of absolute humidity at the earth's surface. These observations and calculations made possible a separation of total attenuation of light of the earth's atmosphere into its component parts (molecular diffusion, attenuation by water vapor, and aerosol diffusion). The relation of aerosol attenuation (lagging attenuation, obtained after separation from the total attenuation of molecular diffusion and attenuation by water vapor) to the wave length can be divided into three types: (1) neutral, (2) a monotone increase with a decrease in the wave length, and (3) an extremal course with a maximum location between 460 and 520 mμ and different for the different wave lengths.

Yurov, S. G.
TWO METHODS FOR DETERMINING THE ILLUMINATION FROM LARGE SURFACES. [1960] [22]p. 31 refs. M 1034.
Order from LC or SLA mi$2.70, ph$4.80 60-13737

Trans. of [Zhurnal Tekhnicheskoy Fiziki] (USSR) 1948, v. 18, p. 1073-1083.

A brief account is given of the present (1948) position of the problem of determining the geometrical factors involved in the illumination of a section of a surface by another surface source. There are also described (1) a simply constructed integrator, which is applicable to the determination of the illumination from a surface source of arbitrary shape and inclination; and (2) a graphical-analytical method, which does not require any special auxiliary apparatus, such as screens, nomograms, etc.

Solid State Physics

Hsu, Ju-chun, Wang, Jui-min and others.
EFFECT OF INFRARED IRRADIATION DURING EXCITATION ON THE PHOSPHORESCENCE OF ZnS-Cu·Sm. 22 June 60, 18p. JPRS: 3422.
Order from OTS $0.50 60-31292

Trans. of Acta Physica Sinica (Chinese People's Republic) 1959, v. 15, no. 10, p. 550-557.

The effect of the intensity of excitation and the infrared irradiation during excitation on the decay time constant α and intensity J of phosphorescence of ZnS-Cu·Sm was studied. The changes of α and J under different conditions of excitation by the sun were compared. By measurement of radiation as a function of increasing temperature, the mechanism responsible for the change of phosphorescence by infrared irradiation during excitation was found. (Author)

Lyamina, A. N. and Lybimtsev, A. I.
AN X-RAY METHOD FOR THE DETERMINATION OF THE DEGREE OF GRAPHITIZATION OF ELECTRIC BRUSHES. [1960] [18]p. 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-14414

Trans. of [Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Mineral'nogo Syr'ya. Trudy (USSR) 1939, v. 142, p. 18-26].

Pitsch, Wolfgang and Schrader, Angelica.
THE FORM IN WHICH CEMENTITE SEPARATES OUT OF FERRITE. [1960] 11p. (5 figs. 1 table omitted) 7 refs.
Order from SLA mi$2.40, ph$3.30 60-16763

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1958, v. 29, no. 8, p. 485-488.

(Read at the Düsseldorf meeting of the Subcommittee for Metallography on May 21, 1958.)

Seiter, H. and Fischer, H.
ON THE RELATION BETWEEN DEPOSITION CONDITIONS AND GROWTH FORM IN ELECTROCRYSTALLIZATION OF COPPER (Zusammenhang Zwischen Abscheidungsbedingungen und Wachstumsform usw). [1960] [28]p. 20 refs.
Order from SLA mi$2.70, ph$4.80 60-16810

Trans. of Zeitschrift für Elektrochemie (West Germany) 1959, v. 63, no. 2, p. 249-257.

The relation between growth form and exchange current density was studied. For this purpose the transition current density at which pyramidal growth changes to cubic layer growth was introduced as a characteristic quantity of the growth form. The same supersaturation prevails at the transition current density. The exchange current density changes parallel to the transition current density and the ratio transition current density - exchange current density remains constant. Under specific conditions spiral growth which can be reproduced is obtained with pulsating direct current. From the geometrical measurements of the spirals the characteristic exchange current density was computed; it corresponds well with the exchange current density measured electrochemically on the same surface. (Author)

Shubnikov, A. V. and Sheftal', N. N., eds.
GROWTH OF CRYSTALS. VOL. I. 1958, 294p.
Order from CB $15.00/2 vol. set $28.00

Trans. of Russian mono. [Rost Kristallov].

Shubnikov, A. V.
PRINCIPLES OF OPTICAL CRYSTALLOGRAPHY 1960, 186p.
Order from CB $9.50

Trans. of unidentified Russian mono., n. p., n. d.

Yelovich, S. Yu. and Margolis, L. Ya.
THE RELATIONSHIP BETWEEN THE IONIC MOBILITY IN OXIDE LATTICES AND THE RATE OF ISOTOPIC EXCHANGE. [1960] 5p. 7 refs. M833.
Order from LC or SLA mi$1.80, ph$1.80 60-13641

Trans. of [Problemy Kinetiki i Kataliza] (USSR) 1957, v. 9, p. 129-132.

The "relaxation effect" for MnO_2 (an increase in the rate of reduction of MnO_2 by CO caused by preliminary heating of the MnO_2) is used to determine the mobility of oxygen in the lattice of various samples of MnO_2 prepared in different ways, in order to study the crystal imperfections in MnO_2. (Author)

Theoretical Physics

Chapnik, N. M.
CONCERNING THE NONLINEAR THEORY OF THE STRATIFIED POSITIVE COLUMN. Jan 60 [13]p. 6 refs. MCL-168/V.
Order from LC or SLA mi$2.40, ph$3.30 60-19040

Trans. of Russian mono. K Nelineynoy Teorii Sloistogo Polozhitel'nogo Stolba, n. p., 1958, p. 1-8.

An extension of previous computations (Zhur. Eksptl. i Teoret. Fiz. 34: 1496, 1958) indicates that variation in density of charged particles along the axis of the discharge tube causes either damping or intensification of stratifying, depending on the atomic properties of the gas.

Consoli, T.
ADDITIONAL NOTE ON THE STUDY OF WAVES IN A PLASMA RELATIONSHIP BETWEEN ELECTROMAGNETIC WAVES AND THOSE CALLED HYDROMAGNETIC. Oct 58 [3]p. CEN-S.PA 7.701. TC/LB.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3672

Trans. of Commissariat à l'Énergie Atomique (France) no. CEN.S.PA 7.701, 1958, 17 Apr.

Under a particular condition, a transverse hydromagnetic wave is only a particular case of the extraordinary wave which appears as a result of the anisotropy due to the magnetic field. (See also 59-18808, 60-15054).

Consoli, T.
ELECTROMAGNETIC WAVES IN PLASMAS. Jan 60, 7p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3699

Trans. of Commissariat à l'Énergie Atomique [Rapport] (France) 17 June 58, no. CENS/PA/RT 1 TC/JL.

The study of the general case of an electromagnetic wave being propagated in a medium of resistivity other than zero in the presence of a constant magnetic field and any desired direction permits us to gather all the cases studied which have already been presented in a summarizing table just as for particular cases. It also permits transverse hydromagnetic waves to be connected to this study which are only a special aspect of the latter. The interest of these calculations which are carried out starting from the base equations established by Spitzer and from similar hypotheses, therefore, is to generalize and make more explicit the results given by this author in following a method descending from the general to the particular cases. (Author)

Pugachev, Ya. I.
USE OF A PLANE SPACE IN GRAVITATIONAL FIELD THEORY. June 60 [13]p. 9 refs. AFCRC-TN-60-562; MDF P-146.
Order from LC or SLA mi$2.40, ph$3.30 60-19859

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedeniy]. Fizika (USSR) 1959, no. 6, p. 152-161.
Also available in paper copy from MDF as MDF P-146.

In the general theory of relativity, there is introduced a second, known, space in addition to the desired Riemann space. Both spaces are analyzed in the same coordinates. A number of tensor and tensor relations are obtained, which are impossible to obtain in conventional theory. In particular, an intrinsic gravitational field, with a tensor character, and a noncovariant inertial force field, arising as a result of a coordinate transformation, can successfully be separated out of the total field. If the auxiliary space is considered a plane, then a number of relations simplify. The problem of the selection of coordinates is considered and a general tensor expression of the additional conditions to the basic field equations, containing the differential identity, is obtained. (Author)

Stanyukovich, K. P.
UNSTEADY MOTION OF CONTINUOUS MEDIA. 1960, 745p.
Order from PP $15.00

Trans. of unidentified Russian mono., n. p., n. d.

Syrovatskiy, S. I.
SURFACE DISTURBANCES IN MAGNETOHYDRODYNAMICS (Nekotoryye Svoystva Poverkhnostey Razryva v Magnitnoy Gidrodinamike). Thesis from P. N. Lebedev Inst. of Physics Academy of Sciences, USSR. May 60, 45p. 26 refs. Technical trans. F-23.
Order from OTS $1.25 60-21603

Trans. of Akademiya Nauk SSSR. Fizicheskiy Institut. Trudy, 1956, v. 8, p. 13-64.

These disturbances are divided into four types: (1) tangential, (2) perpendicular shock wave, (3) inclined shock wave, and (4) magnetohydrodynamic wave. They are related by mutual transitions, so that with a continuous change of conditions of motion, a disturbance of one type may be transformed into a disturbance of another type. Such transitions may take place as a result of small perturbations of the surface. A criterion was found, which shows that in an incompressible medium, a sufficiently strong magnetic field parallel to the direction of the motion of the medium stabilizes the tangential disturbances. In both compressible and incompressible media, the stability of motion takes place when the density of the magnetic energy reaches a value equal to the density of the kinetic energy of the relative motion of the medium. An expression for the width of a perpendicular shock wave of low intensity shows that low conductivity of the medium may lead to a significant widening of the shock wave in a strong magnetic field. The character of propagation of perturbations in steady-state flow in a compressible medium is determined by the dimensionless parameters v/c and $H/c\sqrt{4\pi\rho}$.

Vaynshteyn, L. A. and Sobel'man, I. I.
NON-STATIONARY THEORY OF THE STARK BROADENING OF SPECTRAL LINES IN A PLASMA [Nestatsionarnaya Teoriya Shtarkovskogo Ushireniya Spektral'nykh Liniy v Plazme] tr. by J. B. Sykes. Apr 59 [15]p (3 figs. omitted) 12 refs. M 835.
Order from LC or SLA mi$2.40, ph$3.30 60-13643

Trans. of *Optika i Spektroskopiya (USSR) 1959, v. 6, no. 4, p. 440-446.

The broadening of atomic spectral lines by charged particles is considered in a nonadiabatic approximation. This makes possible the derivation of several new results while retaining a comparatively simple quasiclassical model. At the velocities of plasma electrons the Weisskopf broadening mechanism is unimportant, and the broadening is due to inelastic processes. It is shown that the width and shift of the lines decrease approximately as 1/v at high velocities, and ions therefore become increasingly important. The line shift is almost entirely due to ions over a wide range of temperatures. The plasma parameters can often be determined more easily from the line shift than from its width. (Author)

Thermodynamics

Isachenko, V. P.
HEAT TRANSFER WITH CROSS FLOW OF DIFFERENT FLUIDS OVER BANKS OF TUBES (Teplootdacha pri Poperechnom Omyvanii Puchkov trub Razlichnymi Zhidkostyami) ed. by M. A. Mikheyev. May 60 [15]p. 10 refs. RTS 1436.
Order from LC or SLA mi$2.40, ph$3.30 60-17928

Trans. of mono. Teploperedacha i Teplovoye Modelirovaniye, M[oscow] 1959, p. 213-225.

Cross flow heat was studied by using tubes in line and in staggered array, with air, water, and transformer oil. Tube banks with relative pitches $s_1/d = s_2/d = 2$ were mounted in closed circuit. Seven-row banks of copper tubes with 10-mm external diameter were tested. The experiments covered a range of Re_f from 5×10^2 to 1.3×10^5, a range of Pr_f from 0.7 to 480, and a range of Pr_f/Pr_w from 0.48 to 2.7. (The subscripts f and w denote the fluid and wall respectively). For water the fluid temperature, t_f, varied from 11.5° to 68°C and the wall temperature, t_w, varied from 18° to 51°C; for transformer oil, t_f varied from 19.5° to 62°C and t_w from 18° to 51°C; and for air, t_f ranged from 18° to 21°C and t_w from 67° to 70°C. The results are tabulated which were obtained by means of the equation $Nu_f = c\, Re_f^n Pr_f^{0.33} (Pr_f/Pr_w)^{0.25}$ of M. A. Mikheyev (Akad. Nauk SSSR, Otdel. Tekh. Nauk, Izvest. 10: 1448, 1952; available in translation from LC or SLA as AEC-tr-3760), where $n = 0.60$, $c = 0.41$ for staggered banks, and $n = 0.65$ and $c = 0.23$ for corridor banks.

Predoditelev, A. S., Khitrin, L. N. and others.
THE COMBUSTION OF SPHERICAL PARTICLES IN FLOW; EXPERIMENTS CARRIED OUT AT HIGH TEMPERATURES AND THE DETERMINATION OF THE CO-EFFICIENTS OF REACTION IN GAS EXCHANGE. May 52, 53p. (refs. omitted) M209.
Order from LC or SLA mi$3.60, ph$9.30 60-13577

Trans. of mono. [Goreniye Ugleroda: Opyt Postroyeniye Fiziko-Khimicheskikh Osnov Protsessa] (The Com Combustion of Carbon) Moscow, 1949, pt. 3, chap. 7, p. 287-327.

The speeds of combustion and the ratio of speed of combustion to the particle diameter and velocity were calculated from an experimentally obtained relation between the weight of the burning particle and time. Electrode coal and anthracite containing less than 5% ash were studied. The process in its general aspects and the movement of the burning particles are described. The work was done to develop and extend the previous research of Blinov and Tyou and Davis and Hottel.

Schelkin, K. I.
DETONATION PROCESSES. 6 June 60, 18p. JPRS: 2785.
Order from OTS $0.50 60-11728

Trans. of Akademiya Nauk SSSR. Vestnik, 1960 [v. 30] no. 2, p. 12-20.

After a review of the classical theory of detonation an explanation is proposed for the cause of the instability of a plane of detonation, the criterion for which was derived previously (Zhur. Eksptl. i Teoret. Fiz. 36: 600, 1959). The criterion

$$(\gamma - 1)^2 \frac{E}{RT} \frac{M^2 Q}{c^2} \geq 1$$

for the appearance of high-frequency combustion pulsation in a rocket chamber is derived from the previous criterion

$$\frac{E}{RT}\left[1 - \frac{p_B}{p_V}^{(\gamma-1)/\gamma}\right] \geq 1,$$

by neglecting the squares and products of $\Delta p/p$ and M and by regarding Q/c^2 as large in comparison with unity. Here E represents the activation energy of the combustion reaction, T is the temperature of the region, p_B and p_V are the pressures at the corresponding points of the curve, γ is the ratio of the heat capacities, M is the Mach number in zone 2 of the combustion chamber of the rocket, c is the velocity of sound therein, and Q is the heat of combustion per unit mass. (See also 60-31195)

Voytsekhovskiy, B. V.
STATIONARY DETONATION. 26 June 60, 6p.
JPRS: 2885.
Order from OTS $0.50 60-11797

Trans. of Akademiya Nauk SSSR. Doklady [1959] v. 129, no. 5, p. 1254-1256.

An apparatus is described in which stationary detonation was obtained. Experiments indicated that stationary detonations are usually multi-headed and that a solitary front can exist on the border of the detonation only. These fronts oscillate persistently around a constant quantity. A complex interaction of the fronts of impact arises around each of the detonation fronts. When there are a great number of detonation fronts they spread in the burned mixture with the velocity of sound. The velocity of a stationary detonation grows with the worsening of the conditions governing its course. The flame in stationary detonation is blue-green, in contrast to the yellow of normal flame.

Zel'dovich, Ya. B. and [Rayzer, Yu. P.].
HIGH-AMPLITUDE SHOCK WAVES IN GASES [Udarnyye Volny Bol'shoy Amplitudy v Gazakh].
28 Apr 58 [59]p. 88 refs. JPRS/NY-L-86.
Order from LC or SLA mi$3.60, ph$9.30 60-13085

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1957, v. 63, no. 3, p. 613-641.

A survey is made of the various physical processes occurring along the front of the shock wave, and the influences of these processes on the internal structure of the front. Information is presented under the following headings: (1) Brief survey of experimental procedures; (2) Adiabatic curve of shock in dissociation and ionization conditions; (3) The viscous density jump; (4) Expansion of the shock-wave front owing to delayed excitation of part of [the] heat capacity; (5) Structure of the shock-wave front on taking account of radiation; (6) Brightness of the fronts of large-amplitude shock waves; and (7) Electron heat conduction and the divergence between electronic and ionic temperature in large-amplitude shock waves.

Wave Propagation

Grinberg, G. A.
WAVE FIELDS; DIFFRACTION FROM A PERFECTLY CONDUCTING WEDGE. [1959] 20p.
Order from MDF $10.00 MDF G-158

Trans. of mono. [Izbrannyye Voprosy Matematicheskoy Teorii Elektricheskikh i Magnitnykh Yavlenii] (Selected Questions of the Mathe[matical] Theory of Elec[tric] & Magnetic Phenomena) Mos[cow]/Len[ingrad] 1948, p. 470-485.

Grinberg, G. A.
WAVE FIELDS; ELECTROMAGNETIC WAVES IN INHOMOGENEOUS (LAMINAR) MEDIA. [1959] 39p.
Order from MDF $19.50 MDF G-157

Trans. of mono. [Izbrannyye Voprosy Matematicheskoy Teorii Elektricheskikh i Magnitnykh Yavlenii] (Selected Questions of the Mathe[matical] Theory of Elec[tric] & Magnetic Phenomena] Mos[cow]/Len[ingrad] 1948, p. 440-469.

Grinberg, G. A.
WAVE FIELDS; ON RADIOWAVE PROPAGATION OVER THE EARTH TAKING INTO ACCOUNT SPHERICITY & ATMOSPHERIC INHIMOGENEITY. [1959] 28p.
Order from MDF $14.00 MDF G-147

Trans. of mono. [Izbrannyye Voprosy Matematicheskoy Teorii Elektricheskikh i Magnitnykh Yavlenii] (Selected Questions of the Mathematical Theory of Electric and Magnetic Phenomena) Mos[cow]/Len[ingrad] 1948, p. 485-506.

Kogan, S. Kh.
PROPAGATION OF A SYMMETRICAL MAGNETIC WAVE IN A HELICAL LINE. [1960] 11p.
Order from ATS $15.40 ATS-25M41R

Trans. of *Radiotekh[nika] i Elektron[ika] (USSR) 1959, v. 4, no. 11, p. 1869-1877.

Orlenko, L. P. and Stanyukovich, K. P.
SHOCK WAVES IN SOLIDS. 14 July 60, 17p. 1 ref. JPRS: 5022.
Order from OTS $0.50 60-11913

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy. Fizika (USSR) 1958, no. 6, p. 14-24.

The propagation of shock waves in solids under high pressures considering the compressibility of the material is examined. The motion of the material is studied in the zone of an incident shock wave and the reflected wave zone, where the body has finite dimensions. The solution is obtained in the form of finite formulas. The motion of the incident shock wave is investigated by means of a special solution of differential equations of motion. The wave reflected from a free surface is investigated by a general solution of differential equations of motion. The results obtained make it possible to determine all of the parameters of both incident and reflected waves. By utilizing the theoretical results obtained, a dynamic diagram of deformation stress can be derived with the appropriate experiments. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

AKADEMIYA NAUK KAZAKHSKOY SSR. [ALMA ATA]. VESTNIK, 1959 [VOL. 15] NO. 8, SELECTED ABSTRACTS [Herald of the Academy of Sciences of the Kazakh SSR]. [1960] [2]p. SOV/31-59-8-(7, 11)/17.
Order from LC or SLA mi$1.80, ph$1.80 60-17050-8

Consists of selected abstracts in English.

AKADEMIYA NAUK SSSR. DOKLADY (Reports of the Academy of Sciences SSSR). [1960]
Order from OTS $1.40, $20.00/6 mo.
Foreign $1.65, $24.50/6 mo.

1959, vol. 129, no. 5, p. 967-1192, abstracts 1-64, PB 141 015T-62
1960, vol. 130, no. 2, p. 251-480, abstracts 1-69, PB 141 015T-57
1960, vol. 130, no. 4, p. 719-952, abstracts 719-952, PB 141 015T-61

Consists of abstracts in English.

AKADEMIYA NAUK SSSR. VESTNIK, 1960 [VOL. 30] NO. 1. SELECTED ABSTRACTS [Herald of the Academy of Sciences of the USSR]. [1960] [22]p. SOV/30-60-0-1-(3, 15-16, 19, 21-26, 31-33, 40, 42, 44-45, 49, 51, 53-56, 60)/67.
Order from LC or SLA mi$2.70, ph$4.80 60-17855-1

Consists of selected abstracts in English.

NEWS OF UKRAINIAN SCIENCE. 17 June 60, 18p. JPRS: 2831.
Order from OTS $0.50 60-11760

Trans. of Nauka i Zhyttya (USSR) 1960, no. 1, p. 12-13, 19-20, 30, 33, 47, and 56.

Consists of articles by I. M. Bulankin, V. H. Drobot'ko, K. A. Kornev, O. F. Makarchenko, M. S. Polyakov, Ya. I. Sereda, K. F. Starodubov, V. P. Tul'chyns'ka, and P. A. Vlasyuk.

The goals for 1960 of the various branches of Ukrainian science are presented.

PRIRODA (USSR) [VOL. 49] NO. 2, SELECTED ABSTRACTS [Nature]. [1960] [19]p. SOV/26-60-2-(1-3, 6, 8, 15, 31)/52.
Order from LC or SLA mi$2.40, ph$3.30 60-17837-2

Consists of selected abstracts in Englisn.

SCIENTIFIC INFORMATION REPT. 22 July 60, 158p.
Order from OTS $2.75, $28.00/year PB 131 891T-50

Consists of unevaluated information extracted from publications of USSR, Eastern Europe, and China.

SOVIET SCIENTIFIC AND ENGINEERING PERSONNEL. 7 Apr 60, 38p. JPRS: 2466.
Order from OTS $1.25 60-11462

Consists of complete translations of selected biographic-type articles from Soviet sources.

These eulogies are on the occasions of the 50th birthday of Anatoliy Anatol'yevich Voytkevich; the 60th birthdays of Aleksandr Nikolayevich Formozov, Se Semen Grigor'yevich Genes, Petr Ionovich Il'inskiy, Ignatiy Anatol'yevich Lopotko, Dmitriy Yevgen'yevich Melekhov, Boris Ivanovich Migunov, Vadim Vladimirovich Mikheyev, G. Kh. Molotkovs'kyy, Georgiy Aleksandrovich Rikhter, Ivan Alekseyevich Shaklein; the 70th birthday of Mariya Alekseyevna Zakhar'yevskaya; and the 75th birthday of Aleksandr Viktorovich Pakhomov.

Dimov, M.
NEW DEVELOPMENTS IN SCIENCE AND ENGINEERING; 500,000 FRAMES PER SECOND. [1960] 2p.
Order from LC or SLA mi$1.80, ph$1.80 60-17437

Trans. from Nauka i Zhizn' (USSR) 1958 [v. 25] no. 2.

Production of a movie camera with a speed of 200,000 frames a second and development of one that will reach a speed of 500,000 frames a second are announced. Speeds of 10,000,000 frames a second are believed to be possible.

Frolov, Yu.
THE HUMAN BRAIN AND CYBERNETICS. 13 July 60, 7p. JPRS: 3580.
Order from OTS $0.50 60-31421

Trans. of Moskva (USSR) 1960, no. 3, p. 178-182.

Intricate control systems, though they lighten man's load, will never replace the human brain and its initiative.

Kuzyminov, Ivan Ivanovich.
CERTAIN PROBLEMS OF ECONOMIC THEORY IN THE LIGHT OF THE TASKS OF COMMUNIST BUILDING. 4 June 60, 44p. JPRS: 2759.
Order from OTS $1.25 60-11710

Trans. of unidentified mono. (brochure) n.p., n.d.

Contents:
1. The new period of communist building
2. The development of the production of socialism
3. The development and perfection of production relations in the period of expanded communist building
4. The functioning of the economic laws of socialism
5. The political economy of socialism

BOOK REVIEWS

The following book reviews can be ordered by number from LC or SLA. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and a detailed table of contents. The length of each review is indicated at the end of the entry.

BR SOV/3358
Moscow, Nauchno-issledovatel'skiy institut truds. Tsentral'noye byuro promyshlennykh normativov po trudu.
OBSHCHEMASHINOSTROITEL'NYYE NORMATIVY VREMENI NA AVTOMATICHESKUYU ELEKTRODUGOVUYU SVARKU POD SLOYEM FLYUSA (General Machine-Manufacturing Time Standards For Automatic Submerged-Arc Welding) Leningrad, Sudpromgiz, 1959. 110p. Errata slip inserted. 26,000 copies printed. 4p. Mi $1.80, ph $1.80.

BR SOV/3380
Titarenko, Mikhail Vasil'yevich, and Igor' Alekseyevich Noskov-Dukel'skiy.
RELEYNAYA ZASHCHITA V ELEKTRICHESKIKH SISTEMAKH (Relay Protection of Electrical Systems) [Lvov] Izd-vo L'vovskogo univ., 1959. 375p. Errata slip inserted. 3,500 copies printed. 5p. Mi $1.80, ph $1.80.

BR-SOV/3390
Ivanovskiy, Andrey Ivanovich
TEORETICHESKOYE I EKSPERIMENTAL'NOYE IZYCHENIYE POTOKOV, VYZVANNVKH ZVUKOM (Theoretical and Experimental Study of Flows Caused by Sound) Moscow, Gidrometeoizdat, 1959, 114p. 1,600 copies printed. 3p. Mi $1.80, ph $1.80.

BR-SOV/3397
Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze
NEKOTORYYE METODY RASCHETA SISTEM AVTOMATICHESKOGO REGULIROVANIYA I IKH ELEMENTOV; SBORNIK STATEY (Some Methods of Calculating Automatic Control Systems and Their Components; Collection of Articles) Leningrad, Sudpromgiz, 1959. 123p. (Series: Its: Trudy, vyp. 112) Errata slip inserted. 8,400 copies printed. 4p. Mi $1.80, ph $1.80.

BR-SOV/3407
Akademiya nauk SSSR. Energeticheskiy institut im. G. M. Krzhizhanovskogo
PROBLEMY ENERGETIKI; SBORNIK POSVYASHCHAYETSYA AKADEMIKU G. M. KRZHIZHANOVSKOMI (Problems of Power Engineering; Collection of Articles Dedicated to Academician G. M. Krzhizhanovskiy) Moscow, 1959. 851p. Errata slip inserted. 2,500 copies printed. 6p. Mi $1.80, ph $1.80.

BR-POL/3429
Strojny, Zbigniew, Master of Engineering
ODLEWNICTWO CISNIENIOWE (Die Casting) Warszawa, Panstwowe Wyd-wo Techniczne, 1959. 251p. Errata slip inserted. 2,000 copies printed. 4p. Mi $1.80, ph $1.80.

BR-SOV/3446
Anisimov, Yefim Georgiyevich
PROYEKTIROVANIYE STANOCHNYKH PRISPOSOBLENIY V SERIYNOM PROIZVODSTVE (Design of Machine-Tool Fixtures in Serial Production), Moscow, Mashgiz, 1959. 165p. 6,000 copies printed. 3p. Mi $1.80, ph $1.80.

BR-SOV/3449
Shamirgon, S. A.
CHTO TAKOYE TSENTROBEZHNOYE LIT'YE (What Centrifugal Casting Is) Moscow, Mashgiz, 1959. 110p. 7,000 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3453
Chernavskiy, Sergey Aleksandrovich, Georgiy Mikhaylovich Itskovich, Vyascheslav Aleksandrovich Kiselev, Kirill Nikolayevich Bokov, Mikhail Aleksandrovich Bonch-Osmolovskiy, and Boris Pavlovich Kozintsov
PROYEKTIROVANIYE MEKHANICHESKIKH PEREDACH; UCHEBNO-SPRAVOCHNOYE POSOBIYE PO KURSOVOMU PROYEKTIROVANIYU DETALEY MASHIN (Designing of Mechanical Drives; Text and Handbook on Machine Parts Designing) Moscow, Mashgiz, 1959. 740p. 80,000 copies printed. 4p. Mi $1.80, ph $1.80.

BR-SOV/3473
Korolev, Andrey Andrevich
MEKHANICHESKOYE OBORUDOVANIYE PROKATNYKH TSEKHOV (Mechanical Equipment of Rolling Mill Departments) Moscow, Metallurgizdat, 1959. 495p. Errata slip inserted, 9,800 copies printed. 5p. Mi $1.80, ph $1.80.

BR-SOV/3475
Yemel'yanov, Mikhail Fedorovich
MEKHANIZATSIYA SHTAMPOVOCHNYKH RABOT (Mechanization of Stamping Operations) Moscow, Mashgiz, 1959. 170p. Errata slip inserted. 6,500 copies inserted. 6,400 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3477
Khokhlov, Dmitriy Gavrilovich, and Aleksandr Petrovich Yakobson
PROIZVODSTVO OFLYUSOVANNOGO AGLOMERATA (Production of Fluxed Sinter) Sverdlovsk, Metallurgizdat, 1959. 159p. 2,700 copies printed. 3p. Mi $1.80, ph $1.80.

BR-SOV/3478
Zhokhovskiy, Mikhail Konstantinovich
TEORIYA I RASCHET PRIBOROV S NEUPLOTNENNYM PORSHNEM (Theory and Design of Instruments with Unsealed Piston) Moscow, Mashgiz, 1959. 203p. Errata slip inserted. 4,000 copies printed. 3p. Mi $1.80, ph $1.80.

BR-SOV/3480
Shor, Emmanuil Romanovich
NOVYYE PROTSESSY PROKATKI (New Rolling Processes) Moscow, Metallurgizdat, 1960. 385p. 4,200 copies printed. 3p. Mi $1.80, ph $1.80.

BR-SOV/3489
Loktev, David Abramovich
SBORNIK ZADACH PO NASTROYKE METALLOREZHUSHCHIKH STANKOV (Collection of Problems On the Setting Up of Machine Tools) 2nd ed. Moscow, Mashgiz, 1959. 385p. Errata slip inserted. 20,000 copies printed. 2p. $1.80, ph $1.80.

BR-SOV/3493
Vsesoyuznoye soveshchaniye po filosofskim voprosam yestestvoznaniya
FILOSOFSKIYE PROBLEMY SOVREMENNOGO YESTESTVOZNANIYA; TRUDY SOVESHCHANIYA... (Philosophic Problems of Modern Natural Science; Transactions of the All-Union Conference on Philosophic Problems of Natural Science) Moscow, Izdvo AN SSSR, 1959. 663p. Errata slip inserted. 6,000 copies printed. 6p. Mi $1.80, ph $1.80.

BR-CZECH/3510
Bazant, Vladimir, Vaclav Chvalovsky, Kiri Rathousky, Miroslav Schatz, Jan Starch, Otakar Kolar, Antonin Dyk, and Petr Hix.
TECHNICKE POUZITI SILIKONU (Industrial Use of Silicones) Praha, Statni Nakladatelstvi Technicke Literatury, 1959. 365p. (Series: Makromulekularni latky, sv. 3) 1,400 copies printed. 4p. Mi $1.80, ph $1.80.

BR-SOV/3533
Starostin, Ivan Il'ich, and Georgiy Vladimirovich Yanikov
OSNOVY TOPOFRAFII I KARTOGRAFII (Fundamentals of Topography and Cartography) Moscow, Uchpedgiz, 1959. 367p. Supplement of 30p. Errata slip inserted, 9,000 copies printed. 5p. Mi $1.80, ph $1.80.

BR-RUM/3547
Moisil, Gr. C.
TEORIA ALGEBRICA A MECANISMELOR AUTOMATE (Algebraic Theory of Automatic Systems) Bucharest, Editura Tehnica, 1959. 703p. (Series: Academia Republicii Populare Romine. Stiinta si tehnica, 14) No. of copies printed not given. 6p. Mi $1.80, ph $1.80.

BR-SOV/3572
Nebesnyy, Andrey Danilovich, Vasiliy Vasil'yevich Skvortsov, and Dmitriy Vladimirovich Sokolov
MEKHANIZATSIYA I INDUSTRIALIZATSIYA ELEKTROMONTAZHNYKH RABOT (Mechanization and Industrialization in Electrical Assembly Work) Moscow, Gosstroyizdat, 1959. 218p. 5,000 copies printed. 3p. Mi $1.80, ph $1.80.

BR-SOV/3573
Tsuberbiller, Ol'ga Nikolayevna
ZADACHI I UPRAZHNENIYA PO ANALITICHESKOY GEOMETRII (Problems and Exercises in Analytic Geometry) 23rd ed., enl. Moscow, Fizmatgiz, 1959. 295p. 75,000 copies printed. 4p. Mi $1.80, ph $1.80.

BR-SOV/3577
Blitshteyn, Aleksandr Zinov'yevich
SVARKA ELEKTROZAKLEPKAMI, PRIVARKA SHPILEK I SHTIFTOV (Electric Plug Welding and Stud Welding), Moscow, Mashgiz, 1959. 45p. (Series: Biblioteka svarshchika) 10,000 copies printed. 1p. Mi $1.80, ph $1.80.

BR-SOV/3579
Miroshnichenko, Klimentiy Petrovich
NOVUYU TEKHNIKU —NA SLUZHBU SEMILETKI (New Technique to Serve the Seven Year Plan) [Odessa] Odesskoye knizhnoye izd-vo, 1959. 54p. 2,000 copies printed. 1p. Mi $1.80, ph $1.80.

BR-CZECH/3583
Dominik Capek
FYSIOLOGIE LETCE (Physiology of the Airman) [2nd ed.] Prague, Nase vojsko, 1953. 378p. (Series: Vojenskozdravotnicka knihovna, sv. 2) Errata slip inserted. 4,400 copies printed. 4p. Mi $1.80, ph $1.80.

BR-SOV/3584
Turovtseva, Zinaida Mikhaylovna, and Lev Lazarevich Kunin
ANALIZ GAZOV V METALLAKH (Analysis of Gases in Metals) Moscow, Izd-vo AN SSSR, 1959. 390p. 2,500 copies printed. 6p. Mi $1.80, ph $1.80.

BR-SOV/3587
Tomashov, Nikon Danilovich
TEORIYA KORROZII I ZASHCHITY METALLOV (Theory of Corrosion and Protection of Metals)

Moscow, Izd-vo AN SSSR, 1959. 591p. Errata slip inserted. 4,000 copies printed. 12p. Mi $2.40, ph $3.30.

BR-SOV/3589
SBORNIK RADIOKHIMICHESKIKH I DOZIMETRICHESKIKH METODIK (Collection of Radiochemical and Dosimetric Methods) Moscow, Medgiz, 1959. 459p. Errata slip inserted. 9,000 copies printed. 6p. Mi $1.80, ph $1.80.

BR-SOV/3590
Skorchelletti, Vladimir Vladimirovich
TEORETICHESKAYA ELEKTROKHIMIYA (Theoretical Electrochemistry) Leningrad, Goskhimizdat, 1959. 608p. Errata slip inserted. 13,000 copies printed. 6p. Mi $1.80, ph $1.80.

BR-SOV/3591
Smirnov, Nikolay Vasil'yevich and Igor' Valerianovich Dunin-Barkovskiy
KRATKIY KURS MATEMATICHESKOY STATISTIKI DLYA TEKHNICHESKIKH PRILOZHENIY (A Short Course in Mathematical Statistics for Technological Application) Moscow, Fizmatgiz, 1959. 436p. 20,000 copies printed. 9p. Mi $1.80, ph $1.80.

BR-SOV/3594
Kablukovskiy, Anatoliy Feforovich, and Yan Davydovich Rozentsveyg
PERSPEKTIVY RAZVITIYA ELEKTROMETALLURGII (Outlook for the Development of Electrometallurgy) Moscow, Metallurgizdat, 1960. 102p. 2,500 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3606
Nauchnaya konferentisiya po problemam meteorologii Antarktiki, Moscow, 1959.
TEZISY DOKLADOV (Theses of Reports at the Scientific Conference on Meteorological Problems in Antarctica, Moscow, 1959) Moscow, Gidrometeoizdat (Otd-niye) 1959. 47p. 1,000 copies printed. 5p. Mi $1.80, ph $1.80.

BR-SOV/3607
Sviridenko, Fedor Fedorovich, and Nikolay Titovich Berilov
SOVERSHENSTVOVANIYE TEKHNOLOGII PROIZVODSTVA STALI (Improvement in the Steelmaking Process) [Stalino] Stalinskoye oblastnoye knizhnoye izd-vo, 1959. 64p. 1,500 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3611
Dnepropetrovsk. Metallurgicheskiy institut
OBRABOTKA METALLOV DAVLENIYEM (Metal Forming) Khar'kov, Metallurgizdat, 1960. 326p. (Series: Its: Nauchnyye trudy, vyp. 39) 2,100 copies printed. 5p. Mi $1.80, ph $1.80.

BR-SOV/3624
Akademiya nauk Ukrainskoy SSR. Institut metallokeramiki i spetsial'nykh splavov
METALLOKERAMICHESKIYE MATERIALY I METODY IKH ISSLEDOVANIYA; INFORMATSIONNYYE MATERIALY (Cermet Materials and Methods of Their Analysis; Information Material) Kiyev, Izd-vo AN UkrSSR, 1959. 55p. 1,500 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3644
Klassen, Villi Ivanovich, and Vladimir Alekseyevich Mokrousov
VVEDENIYE V TEORIYU FLOTATSII (Introduction to the Theory of Flotation), 2d ed., partly rev. and enl., Moscow, Gosgortekhizdat, 1959. 636p. Errata slip inserted. 3,000 copies printed. 6p. Mi $1.80, ph $1.80.

BR-SOV/3645
Davydov, Natan Isakovich
STANTSII TEKHNOLOGICHESKOGO KISLORODA (Industrial Oxygen Plants) Moscow, Metallurgizdat, 1959. 362p. Errata slip inserted. 2,150 copies printed. 6p. Mi $1.80, ph $1.80.

BR-SOV/3651
Vsesoyuznoye astronomo-geodezicheskoye obshchestvo
ASTRONOMICHESKIY KALENDAR' 1960 (Astronomical Calendar, 1960) Moscow, Fizmatgiz, 1959. 351p. (Series: Its: Yezhegodnik; peremennaya chast', vyp. 63) 7,200 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3664
Din, Iosua Movshe Vul'fovich
IZGOTOVLENIYE POKOVOK NA SPETSIAL'NYKH MASHINAKH; PROKATKA, REDUTSIROVANIYE I LISTOVAYA SHTAMPOVKA V KUZNECHNO-SHTAMPOVOCHNOM PROIZVEDSTVE (Production of Forgings on Special Machines; Rolling, Swaging, and Cold Stamping in Forging and Stamping Production) Moscow, Mashgiz, 1958. 56p. (Series: Bibliotechka kuznetsa-novatora, vyp. 7) 8,000 copies printed.

BR-SOV/3665
Volpyanskiy, Lev Markovich
LIT'YE V METALLICHESKIYE FORMY (Mold Casting) 2nd ed. Moscow, Mashgiz, 1958. 60p. (Series: Nauchno-populyarnaya biblioteka rabochego-liteyshchika, vyp. 8) 8,500 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3666
Shnitser, L. M.
OSNOVY TEORII I NAGRUZOCHNAYA SPOSOBNOST' TRANSFORMATOROV (Basic Theories and Load Carrying Capacity of Transformers) 5th ed., rev. Moscow, Gosenergoizdat, 1959. 230p. (Series: Transformatory, vyp. 1) Errata slip inserted. 20,000 copies printed. 3p. Mi $1.80, ph $1.80.

BR-SOV/3667
Semyachkin, Sergey Yefremovich
SOVREMENNYYE SPOSOBY SVARKI PLASTICHESKIKH MASS (Modern Methods of Welding Plastics) Moscow, Trudrezervizdat, 1959. 115p. (Series: Novaya tekhnika i peredovyye metody truda) 6,500 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3670
USSR. Ministerstvo svyazi. Tekhnicheskoye upravleniye
NOVAYA 12-KANAL'NAYA APPARATURA VCh TELEFONIROVANIYA PO VOZDUSHNYM LINIYAM SVYAZI TIPA V-12-2 (New 12-Channel High-Frequency Carrier Telephone Equipment of the V-12-2 Type) Moscow, Svyaz'izdat, 1959. 140p. (Series: Tekhnika svyazi) 12,000 copies printed. 3p. Mi $1.80, ph $1.80.

BR-SOV/3671
Akademiya nauk SSSR. Institut elektronnykh upravlyayushchikh mashin
TSIFROVAYA TEKHNIKA I VYCHISLITEL'NYYE USTROYSTVA; [SBORNIK] (Digital Technique and Computing Devices; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 184p. Errata slip inserted. 4,000 copies printed. 6p. Mi $1.80, ph $1.80.

BR-SOV/3674
Spitsyna, Irina Fedorovna
UL'TRAZVUKOVYYE TOLSHCHINOMERY I TEKHNIKA IZMEREIYA TOLSHCHIN S IKH POMOSHCH'YU (Ultrasonic Thickness-Gages and Their Use) Leningrad, 1958. 27p. (Series: Informatsionno-tekhnicheskiy listok, No. 76-77, Elektricheskiye metody obrabotki metallov) 6,200 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3678
Moshchyns'ka, N. K.
NAYNOVISHI DOSYAHNENNYA V HALUZI SYNTETYCHNYKH POLIMERNYKH MATERIALIV (Recent Developments in the Field of Synthetic Polymer Materials) Kyyiv, 1959. 39p. (Series: Tovarystvo dlya poshyrennya politychnykh i naukovykh znan' Ukrayins'koyi RSR [Vydannya] Seriya 5, No. 20) 26,300 copies printed. 1p. Mi $1.80, ph $1.80.

BR-SOV/3681
Akademiya nauk SSSR. Institut fiziki zemli
VOPROSY INSTRUMENTAL'NOY GRAVIMETRII; [SBORNIK] (Problems of Instrument Gravimetry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 76p. (Series: Its: Trudy, No. 8/175/) Errata slip inserted. 1,500 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3686
Belov, Konstantin Petrovich
MAGNITNYYE PREVRASHCHENIYA (Magnetic Transformation) Moscow, Fizmatgiz, 1959. 259p. 7,000 copies printed. 4p. Mi $1.80, ph $1.80.

BR-SOV/3693
Bruk, Emmanuil Solomonovich
USOVERSHENSTVOVANIYE TEKHNOLOGII TSINKOVANIYA SLOZHNOPROFILIROVANNYKH DETALEY (Improvement of the Method of Galvanizing Intricately Shaped Parts) Leningrad, Zashchitnyye pokrytiya metallov) 6,200 copies printed. 1p. Mi $1.80, ph $1.80.

BR-SOV/3695
Yashcheritsyn, Petr Ivanovich
SHLIFOVANIYE (Grinding) 2nd ed. Moscow, Mashgiz, 1958. 62p. (Series: Nauchno-populyarnaya biblioteka rabochego stanochnika, vyp. 20) 18,500 copies printed. 1p. Mi $1.80, ph $1.80.

BR-SOV/3696
Malov, A. N.
MEKHANIZATSIYA I AVTOMATIZATSIYA V SHTAMPOVOCHNOM PROIZVODSTVE (Mechanization and Automation in Stamping) Leningrad, Mashgiz, 1955. 74p. (Series: Bibliotechka shtampovshchika, vyp. 10) 6,500 copies printed. 1p. Mi $1.80, ph $1.80.

BR-SOV/3697
Kuritsyna, Anna Dmitriyevna
ALYUMINIYEVYYE ANTIFRIKTSIONNYYE SPLAVY I TEKHNOLOGIYA IKH POLUCHENIYA (Aluminum Bearing Alloys and Their Production) Leningrad, 1958. 18p. (Series: Informatsionno-tekhnicheskiy listok, No. 56, Liteynoye proizvodstvo) 6,200 copies printed. 1p. Mi $1.80, ph $1.80.

BR-SOV/3699
Goryachev, A. P., S. M. Yegorov, I. S. Fatiyev, and V. A. Semenov
ARGONO-DUGOVAYA SVARKA I PAYKA TITANA (Argon Arc Welding and Soldering of Titanium), Leningrad, 1957. 34p. (Series: Informatsionno-tekhnicheskiy listok, No. 80-81. Svarka i payka metallov) 6,200 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3700
Moscow. Dom nauchno-tekhnicheskoy propagandy im. F. Ye. Dzerzhinskogo
NAKATYVANIYE ZUBCHATYKH KOLES (Gear Rolling) Moscow, 1958. 35p. (Series: Peredovoy opyt proizvodstva. Seriya "Tekhnologiya mashinostroyeniya," vyp. 11, Obrabotka metallov davleniyem) 4,000 copies printed. 1p. Mi $1.80, ph $1.80.

BR-SOV/3703
Vladziyevskiy, Aleksandr Pavlovich
AVTOMATIZATSIYA TEKHNOLOGICHESKIKH PROTSESSOV V MASHINOSTROYENII (Automation of Manufacturing Processes in the Machine-Building Industry) Moscow, 1958. 21p. (Series: Peredovoy opyt proizvodstva. Ser. "Kompleksnaya avtomatizatsiya i mekhanizatsiya protsessov proizvodstva v mashinostroyenii," vyp. 2) 3,000 copies printed. 1p. Mi $1.80, ph $1.80.

BR-SOV/3705
Kon'kov, Arkadiy Sergeyevich
METALLY KUZNECHNOGO PROIZVODSTVA (Forgings) Moscow, Mashgiz, 1958. 61p. (Series: Nauchno-populyarnaya biblioteka rabochego kuznetsa vyp. 2) 10,500 copies printed. 2p. Mi $1.80, ph $1.80.

BR-SOV/3707
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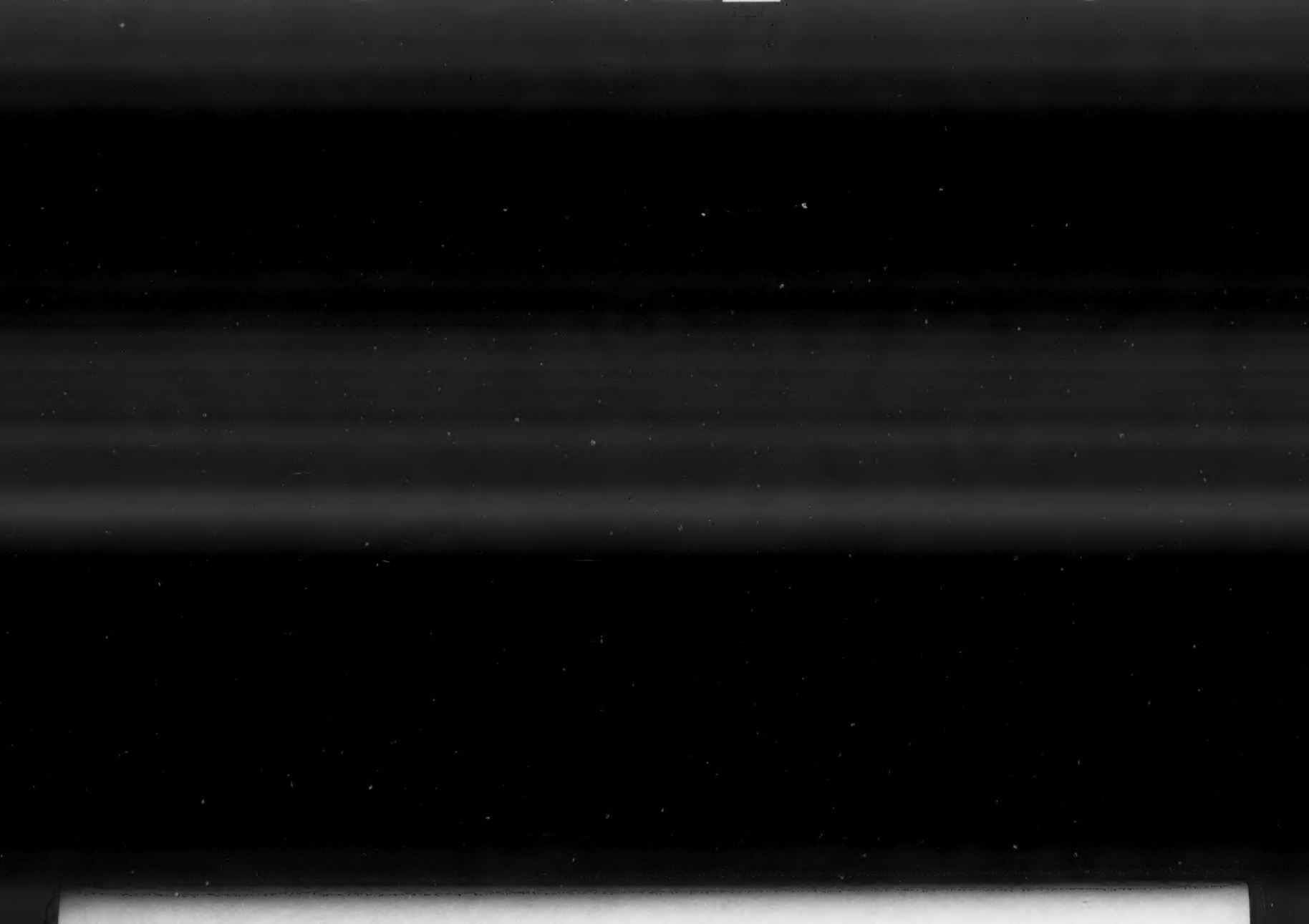

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